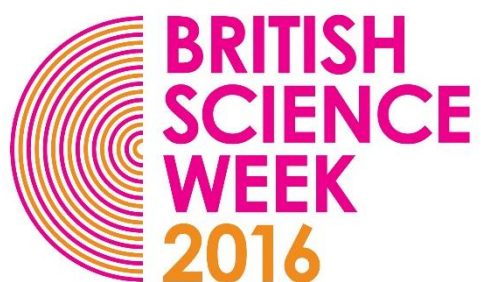


**British Science Week 2016  
Community Grant Scheme  
Evaluation Report**

British Science Association  
June 2016



Department  
for Business  
Innovation & Skills

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# **1. Executive summary**

## **1.1 Project summary**

British Science Week is an annual celebration of science, technology, engineering and maths that is coordinated by the British Science Association (BSA) and funded by the Department for Business Innovation and Skills (BIS). As one of a number of public programmes coordinated by the BSA, British Science Week aims to inspire and support teachers, scientists, engineers, science communicators and the general public, on both an individual and organisational level, to produce science and engineering events across the UK. There are no restrictions on who can organise events and activities, the topics on which they focus or the audiences and venues; the resulting programme is an eclectic mix of events. British Science Week 2016 ran 11-22 March.

In order to expand the audiences that engage with science and self-identify as having an interest in science, BIS provided the BSA with funds to distribute grants of £500 to community groups/organisations for the British Science Week 2016 Community Grant Scheme. The grants enabled community groups that work with audiences who are traditionally underrepresented in science to run events for British Science Week. This was the second full year the scheme ran.

## **1.2 About this report**

This report evaluates the success of the British Science Week 2016 Community Grant Scheme based on demand for the grants, the profile and experiences of recipient organisations and the profile and experiences of event audiences.

Analysis of recipient organisations is based on data collected from their grant applications and anonymous feedback surveys completed online after British Science Week. In addition, this report includes case studies based on interviews with six grant recipients.

Analysis of audiences is based on data collected from anonymous printed surveys that event organisers distributed to their participants and then posted back to the BSA. The BSA commissioned The Audience Agency to analysis these data, and their separate report on their findings is included within this report.

## **1.3 Key findings and recommendations**

- There were 218 applicants for the 50 grants, a 61% increase from 2015.
- Two recipients withdrew just before British Science Week and one new group was awarded a grant, leaving 49 grant-funded events. The BSA should consider awarding a few extra grants in future years in anticipation of some groups withdrawing due to unforeseen circumstances.

- Grants were awarded in 11 of the 12 regions of the UK, all but the South West, which should be prioritised for 2017.
- 93% of grant recipients rated their experience of organising a British Science Week event as "excellent" or "good", and none rated their experience as "poor" or "terrible".
- The scheme is estimated to have engaged over 16,000 people.
- Overall, the activities supported by the grants attracted more marginalised groups and audiences from lower socio-economic backgrounds, based on geodemographic and engagement segmentation.
- Ethnically diverse audiences participated in grant-funded events: 64% of attendees identified as White, compared to 87% of the UK population.
- The least represented target group was people living in a remote and rural location. Community groups targeting this audience should be prioritised for 2017.
- 76% of event attendees were first-time participants in British Science Week
- 81% of attendees who didn't work in a science related job recorded an increase in their level of interest in science as a result of attending an event

## 2. Grant criteria

The grants were specifically for community groups that worked directly with audiences who are traditionally underrepresented and currently not engaged in science activity. These groups could include:

- people who are Black Asian Minority Ethnic (BAME)
- people with low socio economic status (SES)
- young people with anti-social behaviour, including those not in education, employment or training (NEET)
- people with a disability, defined as a physical or mental impairment that has a substantial and long-term effect on someone's ability to do normal daily activities (Equalities Act 2010)
- girls and women
- people living in a remote and rural location (settlements of less than 10,000 people with a drive time of over 30 minutes to a settlement of 10,000 or more)

To be eligible for the grant, applicants had to demonstrate the following:

- they had to be a community based group or organisation
- their event had to target and include audiences that are underrepresented in science, as defined above

- their event had to be related to science, technology, engineering or maths

Applications were prioritised that demonstrated a fit with the BSA's goal of making science a fundamental part of culture, e.g.

- the event was embedded in the local community
- the event showcased science's role in everyday life or challenges the idea that science is separate from culture
- the event would have legacy, providing a way for those involved to continue their engagement with science.

Grant money could be used for room hire, publicity, speakers, trainers, outreach shows, freelancers, AV hire, reasonable volunteer expenses, transport or other costs of activities or events celebrating British Science Week. Grant money could not be spent on large competition prizes, non-consumable equipment (e.g., purchasing microscopes or computers), on-going salary costs, costs that were already covered by other funding, general running costs and overheads that were paid for by other income.

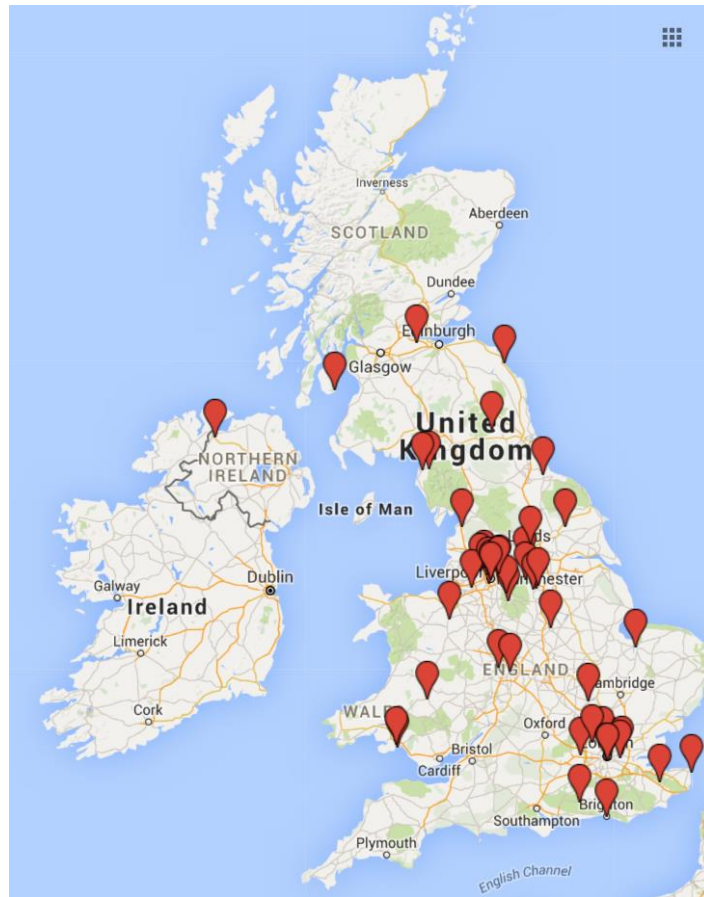
### **3. Grant recipients**

The BSA received 218 applications for this year's grant scheme, a 61% increase from the 135 applicants received in 2015. This demonstrates a growing demand for locally-led community science events. Fifty grants were initially awarded, but two groups were unable to run their event due to unforeseen circumstances and returned the funding last minute. The BSA was able to award a grant to one additional group, leaving 49 grant recipients.

Of the 49 groups that ran events, 37 had not previously participated in British Science Week. Notably, 7 of the 12 that had participated previously were 2015 Community Grant recipients.

We had representation in 11 of the 12 regions of the UK, with no grant-funded events in the South West. The grant recipient who was unable to run his event was in the South West, so this would have led to events in all 12 regions. Nonetheless, ensuring that there is coverage in the South West will be a priority for the BSA in 2017. It is also worth noting that there is limited coverage in Scotland because the BSA offered a separate British Science Week grant scheme in 2016 to specifically support Scottish schools and organisations, funded by the Scottish Government. If this separate Scottish grant scheme does not run in 2017, the BSA should also prioritise representation of Community Grant events in Scotland.

## Locations of Community Grant-funded events



There was a good spread of events reaching different target groups, as reported by the grant recipients in their applications.

Target audience	2015 grants	2016 grants
People who are BAME	25	19
People with low SES	34	32
Young people with anti-social behaviour, including NEETs	18	18
People with a disability	14	17
Girls and women	N/A	16
People living in a remote and rural location	9	6
Other	21	N/A

Note: one event could target multiple groups

Forty of the 49 grant recipients completed an online feedback survey about their experience organising a British Science Week event:

- 93% rated their experience of organising a British Science Week event as “excellent” or “good”, and no one rated their experience as “poor” or “terrible”
- 70% said that organising a British Science Week event made them more interested in science
- 93% said that they are likely to take part in British Science Week in the future

### 3.1 Case studies

The BSA commissioned an external evaluator to conduct interviews with six grant recipients about their British Science Week experiences and the impact the grant funding had on their organisations.

#### 3.1.1 Case study 1: LPF Kiddies Club CIC

[www.lpf-kidsclub.wix.com/lpf-kiddiesclub](http://www.lpf-kidsclub.wix.com/lpf-kiddiesclub)

##### **Carmel Britto, Founder and Director**

LPF started as a holiday club in 2013 and has now expanded to include an after-school club, a weekend supplementary school, a parents' forum and a women's network. Carmel is motivated by a desire to give young people opportunities to succeed in education and to enable them to access a wide range of experiences. She sees helping parents to understand the education system as integral to this. LPF's work is entirely grant funded, and they could not have run a BSW event on the scale they did without the BSA's financial and other support for staffing and equipment. Making content relevant and accessible is crucial and so their approach to BSW was aligned with the BSA's vision.

For British Science Week, Carmel, working with four other people at LPF, organised a science fair with activities covering a range of scientific areas, including engineering, food science, agriculture, electricity and aerodynamics. Examples of the activities include recycling materials into toys, mini-blogging, creating different paper planes and comparing their distance and speed of travel, and calculating the sugar and salt content of their packed lunches.

##### **Transition opportunities**

*Organisation:* LPF had engaged with science through two previous external events: SMASHFest UK (a festival in London that explores STEM through arts and design) and another organisation's BSW event, which was more structured and introduced them to robotics and coding. The BSS Community Grant fitted with their overall aims, as they had previously been doing “quite basic curriculum stuff with our students” but saw that the children could do more. They had also done maths quizzes, recycled toy workshops and other activities before “but we've never focused it on being a science-based activity. It was never, ‘we are learning science’”. Post BSW, they will

do more. Carmel hopes to start a weekly science club with “real experts who can deliver proper workshops” and that is “learning based and really, really fun for them”, so this time next year, “it’s not going to be so foreign to them”.

*The organiser/s:* Carmel said that “the biggest challenge for me was getting myself into the frame of mind where I realise I’m not this amazing scientist and there is a limitation to what I can teach these children myself, so where do I find the support to help me deliver the things I want to deliver”? She studied science until she left school and then “there wasn’t any real interaction but just like the children, this process showed [that science] is something I do all the time”. She researched topics online: “engaging in British Science Week gave me a lot of computer hours ... learning new skills, understanding certain things, being able to put together little workshops and experiments and understanding the science behind it all, the maths behind it all, the engineering behind it, and brushing up on terminology. We had to go away and do a lot of learning ourselves”. She also spent time learning from the events they’d been to, “just really immersing myself in everything”. There was a lot of peer teaching with volunteers explaining science to each other. Their volunteers also took part in SMASHFest, which was excellent preparation for their own BSW event. Carmel and the volunteers became more interested in science through the engagement of the children and their parents.

*Parents:* As LPF prepared for the event, “the children became really excited about it and then the parents were even more excited. I think that was key for us because we had parents coming to the event and getting involved which was a really, really positive thing for us”. Parents usually attend LPF only in a supervisory role, but this event had activities for parents to do with their children. “It was just amazing watching the parents interacting with the children and the children with the parents. The parents were really engaging with the activities and their children”. After the event, parents asked for science packages that they could use at home with their children and LPF are getting costings for this.

*Children:* The event “was really, really well delivered and really well received”. Most participants were aged 5 to 12 but some teenagers also came. “The biggest response we had was children who didn’t think science was something they actually did... They didn’t see how science tied into their everyday living and their everyday experiences, and they’d say ‘Oh I’ve done this before’, or ‘We’ve done this at home and we’ve made this, that was actually us doing science experiments’”. One child who had replicated something from YouTube said: “I didn’t know that was a science experiment. Now I’m going to go home and tell my parents we do experiments’... So it was them being able to combine what they’re doing with outside experiences and other experiences that they could have that was very key for us. And them realising, well actually, they engage in all these things all the time, even though they don’t realise it...”. In response to the interviewer suggesting “their identities changed a bit”, Carmel agreed, “it really did. Because [at first] we had children saying, ‘no, we don’t do science. I’ve heard about this or we’ve done this in school before but we don’t really do science. No we can’t be scientists’... And



when we asked them what scientists were, that was really interesting as well because they didn't equate themselves to people who could be scientists". This changed and they started saying "well just being able to do a basic maths equation, that makes you a mathematical scientist". Through the event, the children grew their notion of science/scientist so "being a scientist could mean that you're an architect or an engineer, or it could mean that you do farming because these are all science-based activities, it's not just you in your lab coat, stuck in a lab, mixing potions and things exploding, that isn't all science is".

**Equity:** Carmel saw the BSW event as expanding children's "aspirations...for them to understand that they can go on into these careers and be these scientists that they didn't think they could be". In particular, for girls, it is important to put them "into a room with female scientists... They're not used to seeing women of colour as scientists... 'okay, people that look like me, that sound like me, that come from where I come from can go on to become scientists and being a scientist isn't what I thought it was, it is actually interesting and really cool'". For the boys too, it is important for them to see people of colour as "not just low-end employees, [but] high-end employees in these fields". They could not get professionals involved in this event but have in the past and will do so in the future.

### **3.1.2 Case study 2: Oldham community groups**

#### **Red Star Bengal Football Team, Glodwick Mosque and other Oldham community groups.**

##### **The event organiser requested not to be named.**

The interviewed event organiser is involved in a group of Oldham community organisations which work with the same people but focus on different activities: a football club, a boxing club, and a youth organisation. Most of the community is Muslim, and Islam is very important to him personally, so he and other volunteers are active in the local mosque too. As community money has dried up and the organisers have gotten older, they have become less active and increasingly focused on sport. They initially saw a link to BSW through sports science. BSW also offered a way to make use of the dedicated community space in their newly-built mosque. Their underlying goals matched with the BSA's vision of science as integral to culture. They called their project "'Science is life': we wanted to make that connection between real life and science, so science wasn't just an academic subject that scientists do. That's why we did the Islamic link but also why we took it out to the football and the boxing clubs".

*For British Science Week*, they organised four activities: sports science sessions for the football and boxing clubs, a trip to Manchester's Museum of Science and Industry, and a science fair in the mosque. The funding paid for travel to the museum, science fair equipment and refreshments. New volunteers who work in science got involved in organising the science fair and were able to get some materials for free. The science fair ran from 11am-3pm and was "a mini science museum" with about

12 stalls, some informational, others interactive, covering the Koran and science, dry ice, DNA extraction from strawberries, and anatomy (with life-size cut outs of the human body).

### **Transition opportunities**

*Organisation:* The focus on science brought in new volunteers: “a group of young ladies who work in the science field really took on that project and made it their own”. They got involved through word of mouth, and BSW gave them a chance to do something in the community, drawing on their professional expertise. These women are keen to organise follow-up activities, and the organiser agreed “I think we would like to do more science events”. However, he also described them as “science heads” and stressed the need to maintain a diversity of activities and “not to overdo it with the same kind of programme”.

*The organiser/s:* The event organiser felt that at school, “I was probably better at science than in the arts”. But he “abandoned science” and did a law degree. Being involved in BSW made him wonder if “I had pursued a career in science...maybe I would be more successful” as it would have allowed him to “tread a clearer career path”. Being between jobs at the time, BSW stirred up such “old thoughts”. Although his BSW interest was motivated not by science but by community development, “I think it's had a bigger effect on me as well as the community than I ever thought it would”. He delivered the two sports science sessions after a science teacher pulled out. In addition to “background research” for these, he put a lot into BSW including writing a detailed report “because I wanted to reflect the success of the programme”. When asked if he was going to continue, he said, “I have too much going on in my life...to start again [with science]... I don't think it's for me now, I don't mean it never would be”.

*Children and young people:* The sports science workshops had around 25 participants at each, all male; the footballers were aged 12-14 and the boxers aged from 5 to 40 but most were young. A mixed-age group of 12 people went to the Museum of Science and Industry. Around 170 people attended the science fair, predominantly female (perhaps because of the style of the marketing and networks of the female organisers). The response to the science fair was overwhelmingly positive: “people really, really enjoyed it”. Even teenage boys who had not been keen to go in came out discussing what they had enjoyed. “I truly believe” this has changed attitudes for the younger people and they will now see science as part of their life (although he stressed it would need ongoing work to sustain this shift). “When you see an Asian lady with a head scarf on, but with a lab coat on and wearing goggles and gloves, it's something that's not always represented in mainstream marketing in science. I think that will have got people thinking, ‘If she can do it, if that's a viable image of a scientist, then there's a place for me in that space as well’”. He also introduced discussion of science careers into the sports sessions, e.g., physiotherapist. It is difficult to engage “young lads” in academic work so he took “what they love” and linked it to hydration, respiration, kinetic energy, and so on. The event organiser found the young people could answer the questions

using their science knowledge from school but had not previously made “the link between their activity and science, that happened on the day”.

**Equity:** Participants were largely drawn from working-class Bangladeshi and Pakistani backgrounds. “I don’t think the ethnic identity played as much of a part [as religion]”; they are under-represented in science but “we have easy access to these communities”. Islam was central to the science fair; the organiser’s intention had been to help bridge the perceived “gulf between Britishness” and Islam by focusing on what the Koran says about science and on the historical contributions of Muslims to science, “marrying up people’s pasts, presents and hopefully futures”. Countering stereotypes of Islam as out of date, “connecting Muslimness to science...it almost gave a legitimate platform to celebrate that... It almost gave a validation” to their Islamic identities, by connecting religion and modern life, in the context of increasing Islamophobia. The social power of science is critical to this. Reflecting on the role of social class, the organiser said: “You could argue, I’m making generalisations here, that science is a more middle-class area of work to go into. There are people who aspire from all classes to become doctors, for example. But I don’t think, living in the area where we are, that there are people who aspire to become scientists in the broader sense because they don’t know what that involves. They haven’t got a neighbour who is a biomedical scientist... I’m in the same boat... In that sense class is important”.

### **3.1.3 Case study 3: WellFit CIC**

[www.wellfitglossop.com](http://www.wellfitglossop.com)

#### **Mick Owen, Director**

Mick works in a social enterprise that uses various interventions to raise individual and community wellbeing. They began by organising physical activities for elderly people in disadvantaged communities, but they now also work with other groups notably looked-after children (Mick is also a foster parent). Their work is directed at “making people feel happier and be healthier”.

*For British Science Week*, Mick applied for the Community Grant because he saw it as an opportunity to do something WellFit have talked about for years: to take a group to the canals and explore this local heritage. The application built on previous intergenerational work, but “the event we planned for and the event we ran weren’t exactly the same thing”. A planned trip to the lime kilns at Buxworth to explore their links to the canal network became a trip to an archaeological dig around an old mill linked to the canals. But when the key archaeologist went to the US, WellFit limited what they did to a canal trip. They took an intergenerational group on a 120-year-old boat which was recently featured on John Sergeant’s television documentary series “Barging Around Britain”. The journey took them across the highest aqueduct in England and through a tunnel and a lock. The learning was focused on the technology associated with these features and of canals and boats more generally.

## Transition opportunities

*Organisation:* Much of what they did was new to them as an organisation. Notably, “we’d never taken a trip together” except for walking football matches. This involved careful preparation and new risk assessments, but “it has encouraged me to think more about that kind of thing...a trip that was absolutely about learning. There was a 71-year-old lady so interested and so hungry for more learning”. Overall, BSW has made Mick want to focus more on learning, which is one of the five tenets of wellbeing but one that they have somewhat neglected as an organisation: “We’ve never been into learning per se... we just hope it happens as you go along”. They would like to run the event again, and Mick also has other ideas. For example, as they are on the edge of the Peak District, they could take a trip there to learn about the area’s geomorphology. “We’ll definitely look at more science events”, but the science will be secondary as “it’s about being together and learning together”. The way BSW inspired them to try something new meant that Mick will cite the event “as one of the things we can do that other people don’t seem to try to do”, and as a success. He has applied to Children in Need “off the back of the trip and the experience” to keep the looked-after children group together through a year-long project. A full year of experiences would be good, but “having said that, the hit of British Science Week, you wouldn’t want to diminish that... It’s a shame that British Science Week only lasts a week, put it that way”.

*The organiser/s:* Mick, like the other Community Grant recipients, stated clearly: “I’m not a scientist”. He studied English at university, but he is interested in science. In particular, “I find the technology of canals fascinating. How do you make the boat turn left and how do you make it turn more left”? He learns something every time he goes on the canal. Through BSW, he also feels he has become “much more open to engaging with science as a route to learning”, and this is likely to influence WellFit as above. In addition, Mick said: “I had never spoken to a—what’s it called?—archaeology, [Interviewer: an archaeologist] an archaeologist... Oh I might have talked to one years and years ago, but I’d never talked to one in a business context. That was eye-opening.”.

*Participants:* They intended the group to be female-only but in the end had three 11-12-year-olds (two female), three older women, two adults looking after the young people and three other adults involved with the group. In addition, five or six volunteers from the Wooden Canal Boat Society came along and dealt with the bulk of the questions, although they were “not expert educators”. The participants did not have a science background: “These were just ordinary people”. The looked-after young people were recruited in partnership with social services. Mick talked a lot about the conversations that happened between people. For example, one young woman was turning a handle to raise a paddle to let water out. A man who initially helped her do this “was saying to her ‘well you see how that goes up?’ and she was ‘yeah I see how that goes up’. ‘Well if you look at the other side of the gate you can see how that water’s coming out, and that, what you’re doing is you’re opening the tap for that water to come out’. And then she said, ‘the boat will go

down'. 'That's right, that's how the boat goes down, and there's a girl on the other side of the lock doing the same thing and that helps us go down the hill...' and then I think someone said to him 'where does the water come from to fill the canal?'... I think people were learning the whole time". Even as they ate lunch they talked about how the stove works and where the washing up water goes. Other conversations explored the physics of steering and the engineering of tunnels.

**Equity:** WellFit's grant funding is tied to their working in disadvantaged areas: "I wouldn't use the word 'class'; I think it's about income and opportunity, or the lack thereof". He talked about the barriers for those in disadvantaged areas in accessing cultural resources and opportunities, and specifically mentioned the difficulties facing looked-after children.

### 3.1.4 Case study 4: OASIS Community Centre

[www.oasiscommunitycentreproject.co.uk](http://www.oasiscommunitycentreproject.co.uk)

#### **Steve Williams, Centre and Project Manager**

Steve works for a community organisation based on a disadvantaged Nottinghamshire housing estate. Oasis have taken over an abandoned youth centre and developed a community garden. His goal is to bring the community together: "I'm trying to bring a heart to a community that has never really had one" and create a community hub where before the only building in the area was the local school. He saw the BSW Community Grant and applied "by chance". As their funding is low they can only do basics, so "even a small amount of funding can generate a lot of life" and £500 is "quite a lot of money for one event".

*For British Science Week*, they organised The Oasis Kids' Science Circus Celebration: "a fun evening...based around science". Although Steve said that many people initially thought this was a "weird" idea, the Circus theme came out of his sense that "there's all these things performing around us...the birds, the animals, these amazing transformations, and we were just saying there's a show going on around us all the time. Nature's the ring master, and we just need to look at things closely and see what's happening". It was managed by a team of volunteers who are used to working with young people and who contributed ideas. They dressed as "mad professors in white coats... It was a circus theme as well, so they were a bit like clowns" with red noses, giant shoes and clown wigs. The "flying trapeze" featured caterpillars turning into butterflies. They also linked magic to science, for example, through flowers that look like they are dying but then come to life and showing video of speeded-up photography of plants growing (from the community garden where the children work). The event also featured a science facts and figures quiz, an experiments room, and a moment when they switched to ultra-violet lighting. The children were given a clown nose to wear which they exchanged at the end for free gifts including Easter eggs and helium balloons. "We're used to doing things with very little money", so they invested the BSW funding in marketing, little extras (such as lab coats for the children) and longer term resources ("we made sure it

wasn't all wasted on one event").

### **Transition opportunities**

*Organisation:* Last year Oasis carried out a local history project using Lottery funding, and they regularly organise arts and crafts and sports activities. However, this was their first attempt at science. Steve agreed that science will become a larger part of their work following BSW because it "fascinated" and "engaged" the children and their families, including some who were new to Oasis. They found that the theme was so rich that they could have extended it over a term for their kids' project, and they may do this in the coming year. Some of the parents had science birthday parties for their children in which science replaced party games, and Oasis are considering offering this so "that's an interesting spin off". Science is one of "those extra things [that] tends to get forgotten in places like this" which do not have the facilities that cities do: "in a community like this, nothing scientific has hit anything, so there's a lot of room for it". Steve has ideas for a space-themed event with the children dressed as astronauts. He would like to do something scientific aimed at adults too in the future.

*The organiser/s:* Steve explained: "I'm not really a scientist to be honest, but I enjoyed doing [the event] more than I thought I would when I put the thing together". He and the volunteers learned a lot from BSW and, as above, want to do more science events. "I didn't do [science] at school particularly. I didn't see myself as being able to engage with it quite as much. But when I was doing it I found it fascinating, and I was thinking, 'I've got to pass this onto the kids' and 'the kids will enjoy this'... It made me think about it a little bit more and to think what can we do to educate the kids. And it was fun too... It's there all around us, isn't it, science. It's about us, who we are and everything, so we're engaging with it but we don't always realise. I came away thinking, 'yeah, people just don't understand that science is about them and about me and about everyone, and about what we eat and what we breathe and everything'". His volunteers also came up with ideas: "it's inspired them to think of doing some new things". However, as in most of the other case studies, Steve and his volunteers' focus is not on science but on what you can do with it, how it can engage people and bring them together.

*Children:* About 75 children (aged 4-11), 15 teenagers (aged 11-15 from the youth group) and members of their families attended the event, drawn from the estate and surrounding areas. The older children worked with the younger ones. The event was popular with everyone: "Although everyone thought I was a bit crazy at the time" it got a good turnout, and it was hard to get people to leave at the end. They particularly enjoyed the science experiments (e.g., exploding bottles, blowing up a balloon via a chemical reaction). The event was different from what schools offer: it was fun and "they went away buzzing, saying, 'can we do this again?'". The community was interested after "people got over that first they could be involved with it and it's about them too... I think if they heard about something about science again, they would jump at the chance of going to it and seeing what it offered... It was a starting point for lots of people". The role of the lab coats that the children

wore was interesting: “we had this idea of almost mad professors in a laboratory, that was where it started”. On a basic level the lab coats protected the children's clothes, but also: “It made everyone feel part of it and that it was a special occasion. They felt as if they were a scientist for the night, which is what we wanted... It just drew them into the thing straight away. They put on their lab coat and it was like they were stepping into another world... They all felt as if they were part of it and everyone was included”. They took them home afterwards (by popular demand).

**Equity:** Oasis works in a disadvantaged ex-mining area. Residents' focus is on “getting by”, which means that extras get missed: “Science is one of those things that I think people without money, without the ability to go to some big science museum or science project, which kids love, can't do. So to bring science right into the heart of their community and make it accessible to them has done something really good because it's made people sit up and think 'yeah, this is something that I can engage with, something about me and my world', which they would never have seen and done before”. Communities locked into a poverty trap often do not see science and other areas of culture as relevant: “We have to bring [projects] to them because they're not going to go to them”. This was a first for the local community: “In this area, I don't remember anything ever being put on to do with science at all for adults or for children”. The event showed that there is interest out there, and all participants wanted more science events.

### **3.1.5 Case study 5: West Norfolk Self Advocacy Project**

[www.westnorfolkselfadvocacy.blogspot.co.uk](http://www.westnorfolkselfadvocacy.blogspot.co.uk)

#### **Chris, volunteer**

Chris volunteers with West Norfolk Self Advocacy Project. They work with people with learning disabilities and difficulties and people with severe mental health problems (particularly those who MIND and Mencap view as “too dangerous to work with”). Many of their members have been institutionalised and so are inward looking, and the organisation is trying to get them to engage with the world. They work with 574 people and “run on tuppence ha'penny”, since their local authority funding was cut last year. All volunteers must commit to fundraising as well as working with members.

For *British Science Week*, their application started with an interest in flooding. This was related to the area where there are markers of water levels during past floods and “because everyone is constantly making them fearful”. At meetings, members had expressed anger at this scaremongering and asked if there was a real danger of flooding. They applied for the grant to enable them to travel around Norfolk to research this. The money was also used to cover volunteers' expenses. As it focused on members researching a scientific topic and questioning official knowledge, this Community Grant funded project (out of all the case studies) appears to be the most directly oriented to and the most successful at transitioning people into being engaged with science. Despite a nervousness about applying and a sense that they

were “bumbling amateurs” in relation to science, examples of previous events made the scheme feel accessible and generated a feeling that “we could've done that” among volunteers and members.

### **Transition opportunities**

*Organisation:* The group had done some previous scientific work on plant growth, local animals, the impact of wind and wave action on the coastline, and nutrition. But this project had much greater impact, leading to a cultural shift across members and volunteers: “One tends to think in everyday life that science is something that's separate, and you either do it in school or college or it doesn't really impinge on the rest of one's life, which of course is nonsense, when I think about it and when I say it. But that's the attitude I think I had and that certainly quite a lot of the members did...And we only happened across the adverts for grants by accident... So yes, we were quite tentative and worried about putting in a bid and stunned when we got it. We thought science was something different outside normal human relationships”. The group has been running since 2003, and this has been one of their most successful projects: “It's been enormously transformative. It's really odd. Out of all the things we've done over all the years, there's only been one other thing that's held their imagination the way this has”. They are currently reflecting on why this is, and feel that devolving responsibility for research to members was critical. Loss of local authority funding has brought in more volunteers and reduced the number of paid workers, so volunteers too are more likely to “step up” than before.

*The organiser/s:* Chris said: “I've always been interested in science, particularly anatomy and physiology”. She previously worked in a secure unit and with abuse survivors, so “all my science has been people-oriented, although I am actually fascinated by geology”. This is typical of the volunteers, most of whom have an interest in some aspects of science. For example, David, the senior volunteer advisor, engages in practical science (“He's always getting people to experiment with stuff”), someone else is fascinated by “planetary systems”, and others are into electronics and computing. Through the BSW work, “we learnt some amazing things... We couldn't get over the cost [of flood defences]”. But above all, the project changed how the volunteers approach knowledge, developing a “can-do attitude”, doing research for themselves rather than deferring to experts. This is ongoing: “I know David's been talking regularly to people in NASA because of the angle of the British Space Station. He's working with this group of guys who're interested in the electronics side of it, so they've been talking to people in NASA. And it's that thing of 'no, we can go and do this for ourselves'. There're all these institutions, we need to use them. ... [Interviewer: So this is a new thing is it? Talking to professional scientists?] It is. And I think the professional scientists are as surprised as we are. They're like, 'Who are you and why do you want this information?' And then they start engaging”.

*Participants:* Seven members took part in BSW. At an initial meeting, they were negative, saying: “they're not interested in science and they don't want to know anything about science”. But only one person still felt like this at the end of the



project. The group were self-selecting, and after a brain-storming session, their enthusiasm grew: "It was a bit like a ball, a rock rolling down hill, gathering up people as it went". It also opened outwards. For example, "a couple of people who've got quite severe learning disabilities, they help out on their relatives' farms. So they were talking about how good it is after a flood's been in the spring and everything shoots up really quickly. So again that's now being investigated. What happens when it's flooded? Doesn't that kill off all the micro-organisms? If that kills off all the micro-organisms in the soil, why do the plants grow really quickly?" The group also became interested in how memory works through recalling "memories of flooding" from decades ago that felt like they had happened last week. BSW has "stimulated so many things...opened up a whole new range of interest for them... It's been awesome; they're all on a real high now". One member is working with a wireless specialist, another is joining a scheme for managing the wetlands, and both want to become conservation volunteers. Another member is keen to study electronics now, stimulated by questions around how flood warnings are broadcast, and two others are investigating hydraulics.

**Equity:** The transformations for members have been much broader than their relationships with science. The group has become less introspective. Someone who attempted suicide in September, "now he can look at other people, he can make eye contact and he can communicate because he's so stimulated with what's going on". Chris feels that much of the impact is "because British Science Week invested in the group... Because they've got mental health disabilities and learning difficulties, they're used to everyone thinking that they're as they say 'stupid' and 'at the bottom of the pile'. And the fact that Science Week was prepared to invest £500 in getting them to do this work has been of enormous benefit actually". This can be contrasted with the attitude of someone at a different organisation who, when asked to help, said "'we haven't actually got time for that and would these people understand it anyway?'".

### 3.1.6 Case study 6: Jasmine Road Gardens

[www.jasmineroadgardens.org](http://www.jasmineroadgardens.org)

#### **Charlie Hilken, Trustee**

Charlie is a trustee of a community garden. This is a charity with a Friends Group and a Board of Trustees, all of whom are involved in the day-to-day work in the garden. The garden's users are a mix of local people who have plots and people with mental and physical disabilities who volunteer. People also come for specific activities, for example, some bank workers volunteer. They grow vegetables, perennials and annuals. They also have wood work and metal work on site, for example, building stoves and barbecues from recycled oil drums. A woman from the council does paid work there focused on healthy eating. Their long-term aim is to become an EcoHub. While being "ambitious", many people working there are retired and have health problems so "we live from day to day". Charlie himself has hearing difficulties

but remains a driving force: "I goad people from quite an anarchistic; we're a democracy but I stir things up and lead from behind". Ultimately, he wants the garden to become independent of him and Jan, his wife, "so it can go forward without us".

For *British Science Week*, Charlie was motivated by a desire to move people towards evidence-based gardening: "we wanted people to break away from ritualised behaviour (this is the way it's always been done) and embrace a more evidence-based and a scientific attitude to everything". This, and his focus on combining creativity and science, makes him perhaps the most strongly aligned to the BSA's vision of all the Community Grant holders in the case studies: "I see [science] going hand-in-hand with a much more creative attitude to everything, so we're also looking at the site as being a place for expressing people's feelings about things too". The event involved a science-themed day including a gazebo with stalls from the Royal Horticultural Society, Food for Life, Conservation Volunteers and other groups and a range of experiments (for example, cress growing under different light, temperature and hydration conditions; a comparison of woodlouse habitats; and an electron microscope for comparing soil types). They also had a range of activities around the site, such as Gardeners' Question Time, a wormery, and a bread oven where children made pizza and bread and learnt about the associated science. Plans for a play fell through, but they will stage this later in the year. The funding "was tight", but they managed by buying some plants from their normal budget. The money was mainly used for equipment, hire of the gazebo and a donation to Bread to Share in return for their participation.

### **Transition opportunities**

*Organisation:* When Charlie and Jan first saw the BSW grant scheme, they had doubts: "Gosh, is it something we can put to them?" But he found that users were very keen. He has plans for embedding the scientific approach foregrounded during BSW into their work by monitoring growth, temperatures, pH levels, lighting and so on. His plan is to hook up a Raspberry Pi to probes measuring these things. There will be stages towards this: "But it's getting people aware that in any bit of growing that you do, you've got choices: you have choices as to what soil mixture you put them into, how much watering you do, how much light you give them, and you can get into the whole area of hydroponics and so on. It's moving people away from a ritualised attitude to things... When plants don't grow, it's not a failure, it's a learning experience". They are already talking about their event next year, and the woman who took charge of the experiments wants to run a smaller scale science event this summer: "So I think we're already seeing the embedding of the scientific values, which I'm really excited about".

*The organiser/s:* Charlie got a Grade 2 at General Science O level at school, but grew up in the arts side of C. P. Snow's two cultures, and so thought he would be no good at science and mathematics. Later in life he retrained as a craft design and technology teacher, having previously been an English teacher, and so he got into technology through that, becoming interested in metallurgy. He described the craft

work in the garden as “hovering on the edge of science”. Charlie says of himself: “I’m just interested in everything really”. In terms of science, he is currently reading about the chemistry of growing, but “I’m very much at the bottom of a learning curve... I wouldn’t say it’s all new to me but I certainly don’t feel myself to be a scientist. I’m a scientist in aspiration rather than in actual qualifications”. He began learning about more about the chemistry of growing for the event: “I was amazed to find that there seem to be only three main chemicals involved in all organic material [Carbon, Oxygen and Hydrogen]...in endless combinations... It seemed really weird”. The event involved three weeks of intense work for him: “It was energising in one way but it was really, really tiring. There was so much to think about”.

*Participants:* A hundred people attended in addition to “our own people”. “All the people who came and particularly our people thought the day was an enormous success... The place was absolutely buzzing”. As mentioned above, he feels that the event has led to some long-term impact on the regular users of the garden: “I think that probably, they are more open to an evidence-based approach to gardening than they were before, but any gains like that are going to be incremental”. The beginnings of a transition were evident when Charlie wanted to replace the science experimental areas, but the users resisted: “So I think an experimental approach to gardening is taking root”.

*Equity:* Nearly all the participants were local and working class with the exception of a few middle-class people from a local climate change group. The locality is “one of the most disadvantaged areas in the country... There are things that middle-class people take for granted, like using a diary. They don’t have diaries, so their forward planning is really, really rudimentary”. Charlie, due to his past experience as a teacher and running his own business, finds scheduling and organising people and events more straightforward than many others at Jasmine Road. As in the other case studies, the status of science increased the impact of the event: “I think some of the people who had quite low levels of qualifications were quite proud that they were putting on a Science Week [event], which is lovely”. The Garden’s users are not representative of the ethnic diversity of the area but the science event attracted some Black and Asian families.

## 4. Audiences

On average, grant recipients reported that their British Science Week events attracted 331 attendees, meaning that the grant scheme engaged an estimated 16,219 participants.

### 4.1 Audience survey report: summary of key findings

The BSA commissioned The Audience Agency to evaluate the reach and impact of the Community Grant Scheme in 2016 and to inform future programmes. The

Audience Agency analysed the results of audience feedback surveys and compiled audience profiles based on geodemographic and engagement segmentation, which classifies people into different 'segments' depending on their levels of cultural engagement and where they live. Segmentation and profiling can be used to understand more about the lifestyles and motivations of a group of attenders. The Audience Agency used two profiling tools: Audience Spectrum and Mosaic, which are discussed in more detail in the separate report.

**The Audience Agency's full report is available upon request. Below is the report's "Summary of key findings".**

#### **4.1.1 Party size and demographics**

##### Party make up

- 35% of respondents were attending as a family attending with children. This was the most prominent group type, indicating that the activities were widely seen as being family friendly.
- 21% of respondents were attending as part of an organised trip. This was the second most prominent group type, indicating that having access to this additional support offered an encouragement to attend.

##### Age

- In line with the group type findings, the activities attracted a predominantly young audience; with over half (53%) of all participants being under 24, and almost a third (29%) aged 11-19. This compares to population figures of 29% and 11% for these age groups, respectively.
- Attendance by people over 55 was low, with 9% of respondents falling into the 55-65+ categories. This compares to a population figure of 28% for these age groups.

##### Gender

- More women than men appeared in the attender profile, with a split of 58% / 41%. This reflects the pattern generally seen in responses to attender surveys for cultural activities.

##### Ethnicity

- The activities achieved some success in attracting an ethnically diverse audience - 64% of attenders identified as White; which may be compared to 87% of the UK population who identify as such.
- The largest segment of the BAME audience was Asian/Asian British, at 18%. This may be compared to 7% in the UK population as a whole.

##### Disability

- 88% of the attenders identified as not having a disability. This cannot be directly compared to census population data, as the question was not asked in the

same way, but as an indicative comparator 82% of the UK population identify as not having a limiting disability.

#### Geography and mapping

- There was a broad spread of activities across England, Scotland and Wales – although there was a concentration of events in urban areas around Manchester and Leeds areas in the North and London in the South.
- The event attendees were largely from areas local to where the activities taking place, with clusters around the London, Manchester and Leeds areas.

#### **4.1.2 Audience Spectrum**

- Kaleidoscope Creativity was the most prominent Audience Spectrum segment in the attendee profile, with 23% of attendees falling into this group. Urban and culturally diverse, they are generally a lower engaged group in terms of their arts and cultural activity; where they do engage this tends to be in their local community.
- The activities supported by the community grants attracted a generally diverse and lower engaged audience – with both Kaleidoscope Creativity and Facebook Families featuring prominently in the attendee profile. This indicates that the grant supported activity has successfully engaged with some of the more marginalised groups identified as target audiences for this programme.

#### **4.1.3 Mosaic**

- The Mosaic profile broadly reflects the UK population as a whole, with the exception of Urban Cohesion, which was the most prominent Mosaic group in the attendee profile. 20% of attendees fell into this group, compared to 9% in the UK population. Resident in settled urban communities with a strong sense of identity, this group shares key characteristics with the Audience Spectrum Kaleidoscope Creativity segment.
- Overall, the activities supported by the community grants attracted audiences from lower socio-economic backgrounds.

#### **4.1.4 Relationship with science**

- 88% of attendees do not work in a science-related job.
- Almost two thirds of attendees (63%) have an interest in science, but are not especially connected.

#### **4.1.5 Event awareness and drivers to attend**

- Three quarters (76%) of respondents were first-time attendees to a British Science Week event.

- The top three reasons for attending were personal interest, wanting to learn something new, and being brought by someone else; 28%, 25% and 20% of respondents, respectively, cited these as drivers for their attendance.

#### **4.1.6 Experience ratings and impact**

- Attender satisfaction levels were high, with 95% rating the event they attended as 'Excellent' or 'Good'.
- The top three most used words when describing the events were "interesting", "fun" and "informative".
- 81% of attenders who don't work in a science-related job recorded an increase in their level of interest in science as a result of attending a community grant supported event.

#### **4.1.7 Engagement with Black, Asian and Ethnic Minority (BAME) attenders**

- Fewer BAME attenders said they worked in a science-related job – 7%, compared to 14% of attenders who identified as being White.
- Although the reasons for attending were largely the same, a significantly higher number of BAME attenders cited being brought by someone else as a driver for their attendance – 28%, compared to 19%.
- Fewer BAME attenders cited the venue/location of the event as a reason for attending – 10%, compared to 18%; this may be linked to the numbers who were brought to the event.
- The impact on levels of interest in science for BAME attenders was particularly positive, with 53% of those who don't work in a science-related job saying they were much more interested in science after attending an event; this may be compared to 32% of White attenders.

#### **4.1.8 Engagement with women and girls**

- The existing relationship with science was broadly the same for both sexes, but a slightly higher proportion of female respondents said that 'science is not for me'; 12%, compared to 7%. Correspondingly fewer women and girls said that they 'feel connected with science'; 22%, compared to 34% of men and boys.
- The main reasons for attending for female respondents showed some significant differences to those of male attenders.
  - Although 'to learn something new' remained the most cited reason – given by 28% of female attenders – 'thought it would be good for my children' was significantly higher for females; 25% gave this as a reason, compared to 14% of male respondents.
  - Female respondents were less likely to cite personal interest as a driver to attend, with 25% giving this as a reason, compared to 35% of male respondents.