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Event Awards Case Studies

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STEM Category Winner

To Infinity and Beyond!

City College, Plymouth

Target audience

Year 6 Primary School children

People involved

- *Staff*
 - Event Co-ordinator - organising event and liaising with schools
 - 5 teaching staff - running workshops
 - 1 Deputy Principal - welcome and introduction
- *Other organisations/presenters*
 - 1 local sports celebrity (Plymouth Raider) - helping with sports workshop
- *Volunteers*
 - 2 STEM Ambassadors - presenting awards and running lunch time activity
- *Students/pupils*
 - 3 science students - helping with science workshop
 - 2 sports students - running and helping with sports workshops



Why did you first take part in National Science & Engineering Week?

To engage students during science week and inspire students to think about a career in STEM subjects

4 mains steps of the organisational process

• Getting the idea

I first got the idea of using 'superheroes' as a theme in December 2012 when I received an email from the British Science Association and was asked to register my event and give my event a name. I didn't want to call it 'Taster Day' or something boring like that so I thought about a theme that I could use to tie in all the workshops together and create an exciting title. I wanted the event to tie in with the NSEW theme of *Invention and Discovery* so jotted down some ideas like 'the world is your oyster' and 'beyond limits'. Then I thought of 'To Infinity and Beyond!' and that gave me the idea of 'superheroes'.

• Organising

In January 2013 I met with tutors from different faculties and discussed the schedule for the day and confirmed which staff would be involved. I suggested ways in how their workshops could have a 'superhero' spin and once the workshop details had been confirmed, the risk assessment was completed and the schedule was put together.

Due to the schools contacting the College, there was no need to advertise the event, so **by February the schools were confirmed and details were emailed** to those involved. At this stage we requested further details from the schools such as names for the certificates, any parking, dietary or access requirements and consent forms for the parents to complete giving permission for the children to appear in photographs and the local media.

Arrangements for a celebrity sportsman from the Plymouth Raiders and a request for some STEM Ambassadors took place in February and all **other preparations for**

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the event were made in March. This included designing and printing certificates, activity sheets, name stickers, feedback forms and signage, ordering balloons and catering, booking and briefing Student Ambassadors and Estates, designing a holding slide and a floor plan for the Main Hall, purchasing prizes and making up goody bags.

A press release was written and sent a week before the event in March and the local media were invited to the event. An additional press release was sent after the event along with some photographs.

- Delivering

The timing of the event was chosen to coincide with National Science & Engineering Week (15 - 24 March 2013), so it took place on Friday, 15 March. The event was branded 'To Infinity and Beyond!' to tie-in with the superhero themed workshops. The name sounded **fun and appealing to young people** and we used Buzz Lightyear balloons to create a visually exciting set up for the children.

Five primary schools attended, bringing around 10-15 students per group. Each school undertook **three workshops during the day** from the following five:

- create a virtual superhero - Information Technology
- the science behind superhero powers - Science
- design and paint a super shield - Design Technology
- make a superhero car - Engineering
- design a superhero workout - Sports Science

The day started with a welcome and introduction from the Event Co-ordinator and the Deputy Principal. This was an opportunity to introduce National Science & Engineering Week and include a short health and safety brief, information about the workshops and a run through of the schedule for the day. We were also able to introduce the Student Ambassadors, the staff and our guests.

We decided to invite two STEM Ambassadors to run a lunchtime activity at the event to help enthuse and inspire students about STEM subjects, talk about their own experiences and involvements, and portray a **better understanding of the opportunities that a career in STEM can offer.** A volunteer for Devon Wildlife Trust and Marine Biology Association and a Mechanical Engineer at Plymouth University explained to the students how the environment plays an important part to technology and engineering and set the children with an activity where they had to get into groups and **work together to invent their own superhero.**

The children were asked to design a colourful outfit with logo, a name and a catch phrase for their superhero as well as listing superhero powers that would contribute to keeping a local beach litter free. **This activity worked well as it encouraged the students to work together,** be creative and discuss the core issues and problems that litter has to the environment.

At the end of the event, students and teachers were asked to complete feedback forms, and the winners of the superhero activity were announced and presented with their prizes. **All children were given goody bags** to take away with them that included a mixture of college branded merchandise, a Spiderman chocolate bar and a foam glider toy.

- Results/outcome/feedback

The students and teachers commented on how much they enjoyed the day and how it was very well organised. According to the feedback forms following the event, the most popular activities were the 'The science behind superhero powers' and the 'Design and paint a super shield' activities. **Overall, the day was a huge success and enjoyed by all who attended.**

Top 3 tips for first-time organisers

- Start **planning early**
- **Remember your target audience** and ensure **everything you do is adapted** to suit their needs and keep them engaged
- Have a **detailed schedule** and ensure everyone involved has a clear understanding of the event and their role

Top 3 benefits of taking part in NSEW for:

- You
 - A thoroughly **enjoyable event**
 - The opportunity to **meet new people and work with new organisations**
 - An opportunity to **do something creative, exciting and fun!**
- Your school/organisation
 - **Fantastic press opportunity**
 - Builds **excellent relationships** with local schools and organisations **in the community**
 - An **opportunity to gain funding** for future events
 - **Gaining potential students**
- Your pupils/audience
 - Raises aspirations and **awareness of STEM subjects**
 - Learn **new skills**
 - **Have fun**

Quote box

"The **children were focused and engaged throughout** and had great fun. They were interested in everything. The Student Ambassador was great, as was the organisation. Well done."

"It has been a fabulous day. **This should definitely be opened up to all schools in Plymouth.**"

"The experience for our pupils was interesting and very enjoyable. **The event was executed superbly.** My school had a fantastic day. Thank you!"

"What an amazing day that has **given all my children the chance to try something new and really shine.** My children are buzzing!"



Community Category Winner

Steps to Discovery...

Rozelle House, Ayrshire, Scotland

Target audience: Family groups, 5-105 years.

People involved:

- **Staff**
 - Overall staff involvement was 6.
 - Over the lead-in months: 1 main organiser with input on a monthly basis by core staff of 3.
 - On the day: 4 museum staff.
- **Other organisations/presenters**
 - **RSPB** (Royal Society for the Protection of Birds, Ayrshire Branch): 6 volunteers - manning stand & taking guided walks.
 - **SRUC** (Scottish Agricultural College): 3 members of staff and 4 students - manning presentation, stand and wormery.
 - **SEPA** (Scottish Environmental Protection Agency): 2 members of staff - checked the water flow and dipping for life in the bottom of the burn.
 - **Museum** staff did origami activity and guided tours in the house.
- **Volunteers**
 - **2 biochemists** manned microscope.



4 mains steps of the organisational process

Getting the idea

I had been involved in Committee on the Public Understanding of Science (COPUS) events in the past when working at Techniquet in South Wales. I proposed to the museums service here in Ayr, where I now work, that the NSEW **Scottish grant was available for staging a different style of event**, which could be a worthwhile venture to pursue. In June 2012 we set about contacting the British Science Association Scottish branch. In **July two of us attended the NSEW info session, returning enthused with ideas.**

Organising

After a brainstorming session a plan was formulated on the type of event we should go for. Using the theme *Invention & Discovery*, we choose to use the museums underutilised natural history collection and **cross link it to present day environmental** thinking with a quiz and trail through the surrounding parkland. A grant application was sent in. **During the winter months various potential groups were contacted** to ascertain whether they would like to take part, and they all agreed. **Our aim was a two-day event with a lead in exhibition** (this eventually was curtailed by long overdue decorating!). Steady progress was made and morale was boosted on hearing we had won a grant. **The new year brought serious concentration of effort.**

We accessed all **information on publicity offered on the NSEW website** and choose what could be incorporated and used within our budget. The **preparation of venue and trail came together over the days** prior to the event itself with a **meeting with all the key participants** proving very worthwhile for all.

Delivering

Good Scottish weather was not in evidence on 16th /17 March and we had to **pull the outside event into the main house (plan B)** but with **stout footwear and warm waterproof clothing** many braved the walk around the park and Michelle & David from SEPA braved the torrents of the Slaphouse Burn.

Results/outcome/feedback

Over the two days there were 340 people visiting the event, some came especially and some were first time visitors to our museum. Some came from Glasgow and beyond with grandparents and wanted something to do on a damp Saturday. It was **a different angle to our usual 'art' based work**. It also brought audiences to the venue, and on a wet Sunday afternoon it was **pleasing to have such a 'buzz' in the building**. We asked [attendees] if we could have done anything differently: a few tweaks but mainly arrange better weather.

Top 5 tips for first-time organisers

- **Know your target audience.**
For a community event, **diverse activities** are needed.
- Keep it **simple**.
- **Know your co-workers**, pick them with care and **play to their strengths**.
- Good communication and **having a plan B** proved to be a vital ingredient.
- Keep the **core group small and tight** (not too many cooks...)

Top benefits of taking part in NSEW for:

- You
I personally found doing the organising that I still could pull together an event!
- Your school/organisation
My colleagues enjoyed the **practical hands-on activities and interaction with the visitors**.

Quote box

'I will do this with the children at school (origami flowerpots)'

'Can I get a microscope mum?'

'Our adventure was muddy, interesting and awesome'

'I can show my friends how to make paper flowerpots'

' Hands-on fun with something to take home to try on your own.'



Engineering Category Winner

Ideas Lab

Dixons Allerton Academy, Bradford

Who best to design educational toys for children than other children? Now what if the intended market for these toys was developmentally challenged or otherwise disabled children? The students were asked to do just that when they entered 'The Ideas Lab'. **The result turned out to be nothing short of amazing.**

John Kopelciw, a local designer who specialises in developing toys for disabled youngsters and a former founding director at Spacekraft with over 25 years of experience in special needs, **inspired the young engineers with a fantastic talk**, then stayed to **help with the design process.**

Students were given case studies of developmentally challenged children and then **asked to design and make toys and games** based around these challenges.

The young designers came up with **everything from simple educational games to help develop motor skills** to actual electronic devices.

Students experienced what it might be like to have a disability by testing toys in a dark room and from wheel chairs. **Students applied their imaginations and the engineering design process to design and build prototype toys** with moving parts. They also set up electric circuits using batteries, wire and motors.

Participants helped develop educational games, such as a wheelchair basketball game, a spinning wheel operated by the foot and a texture jigsaw for visually impaired children. **Other games helped with developing motor skills**, which is always a challenge for even children without disabilities. With approximately 10 educational toys devised, **the students demonstrated their ability to design and their willingness to care.**

Claire Fitton and Paul Binns, who developed the Ideas Lab said, '**The main goal was to help those who are not disabled understand what it would be like** to live with a disability, then use that understanding to enhance the design process.' Young people who may take their own lack of a disability for granted were forced to think about what it would be like to have differing abilities.

The Ideas Lab was **part of a wider week of events held at the school to celebrate National Science & Engineering Week 2013.**



Secondary School Category Winner

Year 5 Science Fairs

The Market Bosworth School, Leicestershire

People involved:

- *Staff:* It was truly a **whole-school effort** and involved everybody from the **premises team** who welcomed guests on-site, to the **catering staff** who prepared refreshments and lunch for our STEM ambassadors.
- *Other organisations/presenters*
 - Heavy metal rock band Mind the Gap
 - Steve Walsh, ex-captain of Leicester City Football
 - Expert from the National Space Centre
 - Volunteers from Diabetes UK
 - Leicestershire Police PCSO forensics expert
 - STEM Ambassador from the British Geological Survey
 - De Montfort University's programme leader in Clinical Pharmacy
 - Palaeobotanist from the University of Nottingham's Centre
 - Rainbows Children's Hospice
 - Bloodhound SSC
 - Hinckley Fairtrade
 - University of Leicester psychology graduate
 - Pathway Leader for Critical Care from the University of Nottingham
 - Expert on hidden sugar in foods from the Faculty of Allied Health and Life Sciences at De Montfort University
 - Outreach officer from the Department of Physics and Astronomy at the University of Leicester
 - Chief Vascular Scientist from the University Hospitals of Leicester NHS Trust
 - A male and a female full-time personal trainer
 - Dermatologist from the beauty clinic Bosworth Aesthetics
 - Husband-and-wife team from cF/Aware
 - Superintendent Radiographer from the University Hospitals of Leicester NHS Trust
 - Senior Local Floods Engineer from Leicestershire County Council
 - Senior lecturer in Audiology from De Montfort
 - *Britain's Got Talent* Semi-finalists of 2012



Why did you first take part in National Science & Engineering Week?

2013 marked TMBS's first year **showcasing how STEM subjects relate to our everyday lives** through National Science & Engineering Week.

4 mains steps of the organisational process

Getting the idea

The fair was a direct response to the extension of our responsibility to secure access of **independent, impartial careers guidance for all year 8 and 9 pupils**. We passionately felt compelled to extend this duty of care further, with pupils now required to make decisions about their future at the age of 12. **NSEW presented us with a unique opportunity.**

Organising

We invited **300 primary school pupils, their staff and families** to join us and celebrate *Invention and Discovery* for free. **Our own pupils followed normal timetables**, but **for Science they assimilated well-rehearsed roles** of making visitors feel welcome, **taking groups** around the science department, **demonstrating activities** to Year 5 peers and working relentlessly in the background to **ensure transitions were seamless and events ran smoothly**. Our Year 9 Science Ambassadors were brilliant and a real asset to the school as they took on roles independently when lessons in Science were not timetabled. The arrangement **minimised disruption to the learning of our pupils in other subjects**.

Delivering

The **Science Department was transformed into four zones**; learn: BIOLOGY, learn: CHEMISTRY and learn: PHYSICS+ENGINEERING contained over **30 individual table-top demonstrations for Year 5 pupils** to participate in. The learn: FUTURE zone hosted a speed-dating type event with local organisations, universities, STEM Ambassadors and charities who were able to take questions and answers about the importance of invention and discovery in their individual fields of expertise.

A **pyrotechnical demonstration show rounded the experience for our visitors**, with primary school staff and parents setting hands on fire, playing with dry ice bubbles and making hydrogen balloons blow up with a bang!

Heavy metal rock band Mind the Gap kicked off proceedings at an **official opening** where Steve Walsh, ex-captain of Leicester City Football Club and holder of the record for most red cards in the Football League, was presented with an **original and explosive demonstration** that was to be named after him. Joining us on **a cosmic-themed first day** were an expert from the National Space Centre with space artefacts, volunteers from Diabetes UK, a Leicestershire Police PCSO forensics expert, and a STEM Ambassador from the British Geological Survey. De Montfort University's programme leader in Clinical Pharmacy led **experiments on understanding pharmacokinetics**, and representing Science Grrl, a palaeobotanist from the University of Nottingham's Centre for Plant Integrative Biology came with a **display of plants and fossils**. We also welcomed Rainbows Children's Hospice, Bloodhound SSC and Hinckley Fairtrade, each of whom attended all four days. In-between **racing balloon rockets, learning about the science of amplification, taste-testing Fairtrade chocolate and handling real meteorites and dinosaur poo**, young visitors were treated to a free face-painting session from a University of Leicester psychology graduate, masquerading as a face-painting Fairy from Lollipop Land!

The second day allowed us to welcome the Pathway Leader for Critical Care at the University of Nottingham, with invaluable advice on entering a career in Nursing, Midwifery and Physiotherapy. Joining her was: an expert on hidden sugar in foods from the Faculty of Allied Health and Life Sciences at De Montfort University; the outreach officer from the Department of Physics and Astronomy at the University of Leicester; the Chief Vascular Scientist from the University Hospitals of Leicester NHS Trust; a male and a female full-time personal trainer; a dermatologist from the beauty clinic Bosworth Aesthetics; and a husband-and-wife team from cF/Aware, raising awareness of the condition cystic fibrosis. Pupils were able to **shrink marshmallows and jelly babies in liquid nitrogen, generate live scans of blood vessels in their arms, undergo a full assessment of physical fitness and set refuse bags on fire** using a Class 4 laser!

Our third and fourth days gave visitors opportunities to **learn about food chains, ecology and habitats by handling live birds of prey, mini-beasts, pygmy hedgehogs and even a boa constrictor!** A Superintendent Radiographer from the University Hospitals of Leicester NHS Trust, a Senior Local Floods Engineer from Leicestershire County Council and a Senior Lecturer in Audiology from De Montfort University each ran **high-quality table-top demonstrations** that showcased how invention and discovery were allowing advancements across all fields of science and engineering.

We were also privileged to welcome *Britain's Got Talent* Semi-finalists of 2012, the fabulous **Area 51, who unveiled their world-exclusive iGlobot**. With sleek white panels, shoulder mounted lasers and powerful RGB LED lights that could switch to a fiery red if alarmed, the most advanced and refined performing robot in the world brought a befitting end to the week of fabulous fun and excitement. The iGlobot stalked the corridors of the school looking for troublemakers and even the Principal found himself a target of the iGlobot's CO₂ cannons!

Results/outcome/feedback

Four days of fun and participative events and activities involving **over 1,000 families**, across **nine schools in the heart of rural Leicestershire**.



Primary School Category Winner

The Incredible Institute of Inventors

The GSAL junior school, Leeds

Target audience Junior School children and their grandparents

People involved:

- **Staff** : approx. 40 staff members
 - **Class teachers** arranged workshops and lessons
 - **Support staff** helped with logistics
 - **Librarians** coordinated research lessons into different inventors/inventions
 - **Science subject leader** and **science week assistant** planned and coordinated the events, including timetabling grandparent days, assemblies, visiting presenters, development of workshops and resourcing equipment.
- **Other organisations/presenters**
 - Kinetic Science Theatre Group
 - Lady Cecily's Sound Machine Production
 - Professor Varcoe – Leeds University Department of Quantum Physics,
- **Volunteers**
 - 80 grandparents came to our Silver Scientist workshops
 - Car and train enthusiasts volunteered to show different modes of transport
- **Students/pupils**: approx. 380 pupils



Why did you first take part in National Science & Engineering Week?

To **raise the profile of science in the school** and **get the children enthused and excited** about the subject.

4 mains steps of the organisational process.

Getting the idea

December – January: Looked at the NSEW website to understand the theme of the week. Working party to **brainstorm ideas around the theme** and develop a whole school approach to the week. **Staff competition to come up with a new name** for the school during our science week: Incredible Institute of Inventors was voted as the best.

Organising

February: Meetings between subject leader and assistant to finalise timetable of events. **Developed PowerPoints and resources** (year group packs) to support different workshops for each year group to use. Staff meeting to launch the idea for this year's science week and **give the teachers time to plan and prepare**. Distributed **letters to pupils informing them about the science week**, Grandparents days, recycling competition and egg race challenges.

February: Booked visiting speakers and theatre group (rather last minute!)

March: Ordered resources for each workshop, assemblies and investigations. Built our giant smoke ring vortex gadget.

Delivering

We started the week with a **launch assembly with some whizz bang demonstrations** to create a buzz and let the children know it was the beginning of a special week in school. **Each year group was given a theme** for their week linked to invention (e.g., time, transport, communication and entertainment). Throughout the week, each class took part in an **egg race challenge, a balloon debate about the best inventors, library research sessions, a Silver Scientist workshop, investigation lessons** and a range of other fun science activities during lessons and lunch times.

Results/outcome/feedback

Each pupil in the school completed a **NSEW evaluation**. The **grandparents were also asked to complete an evaluation** form after their workshops. Doing this provided us with valuable information about how successfully the activities had been delivered and received. There was a **very positive response from everyone involved** and also we got a lot of **lovely feedback from parents** about how much their children had enjoyed the week. **The teachers were energised by the events** and fed back that it really helped to **create a team spirit with everyone helping each other out**.

Your top 3 tips for first-time organisers

- Start the week with an exciting whole-school event to create a buzz. **Think outside the box and think big**. TV science shows are a great resource for exciting demo ideas (e.g., *QI* and *Bang Goes the Theory*).
- Give yourself and other teaching staff **plenty of time to plan and resource** the activities.
- **Involve the whole school community as early as possible** in the planning stages so everyone gets on board and feels part of the event. **Ask parents and grandparents for help**- you may have some experts who can come in.

The top 3 benefits of taking part in NSEW for:

- *You*
 - **Fun working with a range of people** throughout the school community.
 - **Professional development** of leading a whole-school event
 - Huge **sense of achievement**
- *Your school/organisation*
 - Developing **team spirit and links with the wider school community**.
 - **Great publicity** for primary science teaching and for the school
 - Themed weeks develop **creative thinking and planning**
- *Your pupils/audience*
 - **Fun whilst learning**
 - **Development of innovative thinking**
 - Increased knowledge and **understanding of science and careers** within the subject



Quote box

*"It was **fantastic to see the creative talents of the staff** and the inquiring nature of the children combine to give NSEW such a buzz."*

Robert Lilley - Head teacher GSAL Junior School

*"**NSEW was the best week ever!** I loved taking part in all the different activities and finding out about different inventions."*

*"**I can't believe that my granny didn't even have a TV when she was little!**"*

*"**Building the marble run was the best thing** we did all week. It was fun working out how to make it keep moving for as long as possible"*

Various Pupils – GSAL Jnr Sch

*"**Children can always teach you something**, and while they can still learn from us about technology it won't be for long as **they are quickly overtaking us.**"*

Wendy Fiddler – Grandparent of Y6 pupil.

*"We are thrilled and proud to win the event award; it is wonderful to receive recognition for the hard work that everyone put in. **The award really is the icing on cake for what has been one of the most exciting weeks of the school year**"*

Gwen Lindsey – Jnr Sch Science Subject Leader