

Two Greats are better than one!

THE CHILDREN'S HOSPITAL SCHOOL

at Great
Ormond Street
and
UCH



James Hickman reflects on the impact of two Great Ormond Street and University College Hospitals' Great Science Shares embracing the challenge of an ever-changing cohort of pupils

Context is important

Having trained and worked as a mainstream secondary science teacher, I moved to being a science teacher at The Children's Hospital School at Great Ormond Street (GOS) and University College Hospital (UCH) in London. In this role, I teach science to pupils across the primary and secondary age phases.

With a staff of over 40 teachers, we meet the challenge of a pupil cohort changing on a daily basis, working across two sites and hospital trusts. The hospital schools provide education to children who are in-patients when they would otherwise be in school. We work across a wide range of wards at GOS and across 4 paediatric and adolescent wards at UCH, providing education to children from age 4 years upwards, either by their bedside or within one of the three school rooms on each site.

When I first became aware of the Great Science Share for Schools (GSSfS) in 2018, I instantly thought that it was something that would be near impossible for us to be a part of. The network of

local primary schools were organising an event in which their pupils would join to share their science. I knew that we could have children plan an investigation, carry out their investigation and record their findings, and we could help them find ways to communicate their findings with a wider audience. These were all part of our normal day-to-day science practice, but the issue was the logistics!

There was no way that I would be able to know who, if any, of our pupils would still be with us in June, never mind then being able to organise getting them from hospital to another venue to share their science with a wider audience. I scoped ideas such as me taking their work over to the event myself to show what they were doing, but it felt that that was missing the point. However, the GSSfS as a concept had struck a chord with me and I was determined to find a way to include our pupils, for two key reasons:

1. Science is all about communication. There is little point in formulating questions, ideas and personal theories or investigating the structures and functions

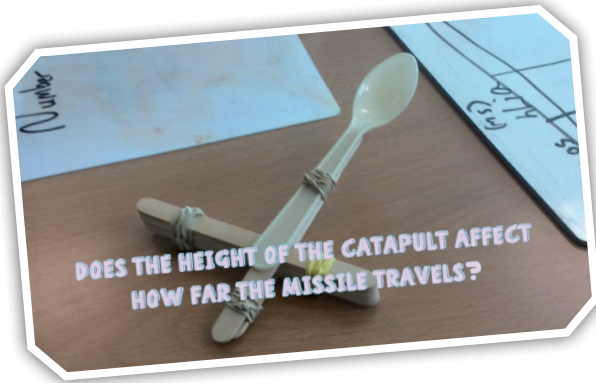
of living things if you aren't going to share it with people. Too often, for me, the curriculum focuses on the need for knowledge and ignores this critical tenant of sharing science, which is so important in the real world. Knowledge is useless if it's static. This event gave a focus to this key skill and I felt that we could use this to also highlight the vast array of ways in which you can communicate science. Science is creative, and science should be shared, so why not be creative in the way you share?

2. We are a child-led school. As much as we are working to minimise the disruption that the child's unique situation may cause on their educational journey, we aim to make that journey with the child feeling some control over the direction. Children in hospital find themselves in a situation where, for almost every aspect of their medical care,

Practical science brought GSSfS to life on the hospital wards



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Children's questions were at the heart of the GSSfS

they are not in control. When it comes to their education, giving them choices and letting them lead are vital ingredients to a successful educational relationship.

The plan and its implementation

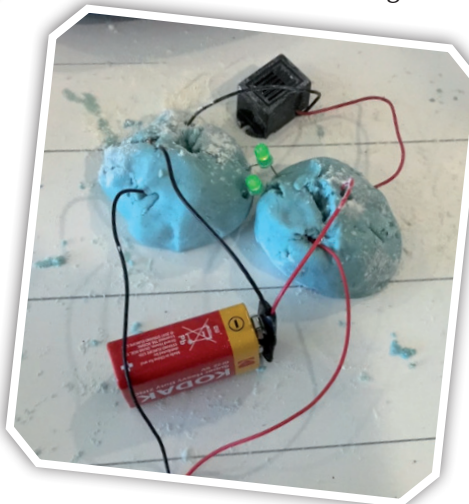
With the support of the Great Science Share team, I decided on the idea to create a video in which children could share their science when in hospital. We could start early and collate what they did, showcasing it on the campaign day in June. This meant that all pupils could be included; whoever wanted to get involved could take part regardless of their position. The video idea was something with which we were familiar to create whole-school collaboration, and which had previously been successful. Keeping our child-led approach, I left the scope of what and how to share science as broad as possible.

My plan was basic – allow teachers to do what they normally do and collate the work they record, then work with a more technically savvy colleague to create our video. We would share it through our social media channels on the day and it would be premiered through live streaming by the central Great Science Share team. We use a secure online platform to allow teachers to post the work of willing pupils onto this space to celebrate work, share success and feel connected as a community. Throughout the year, this platform became full of exciting science being shared by a wide range of pupils across the entire educational spectrum and I felt very excited at the prospect of collating all this into a video. We had lava lamps, electric dough, magical floating fish, bouncing slime, wind-up cars and catapults (to name a few), all being the subject of scientific investigations by our pupils and, now, it was my job to put it all together to provide a snapshot of the science we, as a school, wanted to share. A few weeks before the event, we started to put this work together into a video and, after a labour of love,

the video went into the digital world to represent the first hospital school participation in the Great Science Share.

The impact

It was now time to reflect. Although we had reached the other side of this process and taken part in our first Great Science Share, I couldn't help but feel somewhat deflated. As much as the video reflected the wide range



Electricity-conducting playdough stimulated more questions about light and circuits

of science investigations with which our pupils engage, the day itself had passed without any great focus on the act of sharing science. To take part in something that had felt such a close fit with the way we worked and be left with some sense of disappointment meant that I needed to start asking questions.

Firstly, would we do this again next year? Secondly, why did I feel disappointed and did other staff feel the same too?

I set up a staff survey and, although I knew that the way I had presented and organised this was by no means perfect, I could not have predicted the feedback I received. It highlighted how my own passion for the project had given me tunnel vision!

- 40% of staff had been unclear on what work could be included in the project; and
- 60% of staff felt that I had added extra work onto their workload.

Not an easy read, but really vital to hear. It also felt somewhat ironic that, as a teacher who needs to be able to continuously gather and make use of feedback from pupils to meet their educational needs, I had managed to forget to gather feedback from the teachers with whom I was working throughout this process.

Supportive feedback from staff allowed me to see that the minimal scaffolding had created the opposite of the intended effect – instead of freeing up staff to go in whichever direction the children wanted, it raised a lot of questions and stumbling blocks. Staff had also felt as though I was asking them to complete additional whole-scale investigations on top of the work they were already doing, as opposed to collating the work that was already happening and sharing it with a wider audience.

I was also keen to find out the views of pupils we worked with; however, the transient nature of the cohort and the nature of the video being released at a time when almost all the pupils had left hospital meant that this wasn't possible.

The evolution

The 2020 GSSfS plans were set back due to the COVID-19 pandemic; however, it didn't stop me reconsidering what I want the experience to be for our future pupils.

Giving pupils the freedom to choose what they investigate was already part of their experience and they were already sharing aspects of their work on our digital platform. This opportunity can be built upon and I want their experiences to be closer to that of scientists working in the real world. I want to really highlight the link between science and creativity too, and to give pupils who were not with us in June an opportunity to take part. I want to give clearer scaffolding to staff so that they are more confident and ensure that it doesn't add to their workload.

The way forward:

- Pupils would all be given one basic investigation that they would all carry out, which would be simple and focus in the first instance on how creatively they shared the outcome of this practical.
- Pupils and teachers could extend the investigation to allow for freedom of choice in how they took this investigation further, if they wanted to.
- This investigation work would be carried out during Science Week, in mid-March, so that everyone would be working on this at the same time and it would link in to an event we already focus on, thus not adding to the workload of staff.
- A greater sense of focus and collaboration would be encouraged and the shares produced would be collated into a video that we would screen with the pupils who were with us on the day of the Great Science Share itself.
- Pupils would take on the role of peer

reviewers and either take the outcome of the previous group's work and try to replicate this, or take the work and try to build on it, thus replicating the way science in the real world is shared, reviewed and built upon.



The investigation idea: 'Which 3D paper shape can support the most mass?'

Pupils were given a cylinder, triangular prism and square prism structure to start with, with no method and two aims: devise a method and share your findings in whatever way you choose, be that through a write-up, story, images, video, poster, poem, song, or any other way they wanted. I knew our staff had the skills and ideas to support the children with the creative side, and a very enjoyable staff meeting carrying out the investigation for ourselves meant that we discussed and came together to test what methods we could use, find solutions, and for everyone to then share their ideas.

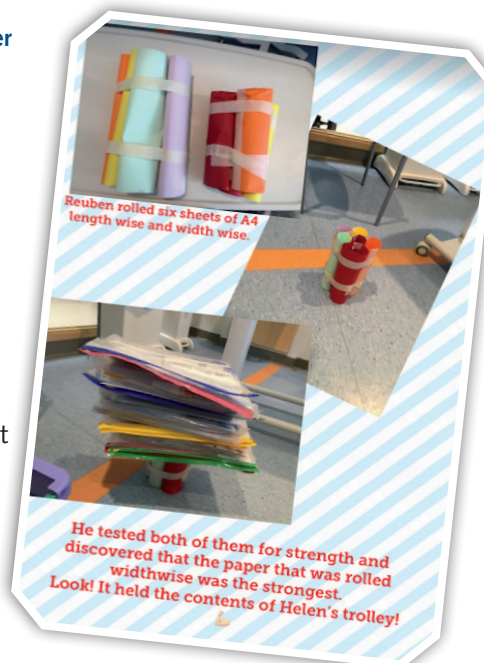
The hospital as a learning environment

The hospital is paradoxically a great source of inspiration and collaboration whilst also being incredibly isolating and restrictive. The hospital school environment is incredibly inspirational and collaborative in two ways: firstly, we represent all sectors of mainstream educational provision (early years, primary, secondary (including A-level) and Special Education) within our staffing structure. That means that I, as a secondary science specialist, work with fantastic teachers from three settings with whom, in mainstream, I would never interact. This daily collaboration has had a huge impact on my own individual practice as a science teacher, allowing me to begin to understand where science sits in each of these three settings and to see how powerful a tool the subject is, across all settings, for engaging pupils in active learning. It has

also allowed me to bring my knowledge of content and ways to apply this to these new settings and support non-specialists in their delivery of the subject.

The hospital environment provides a great source of inspiration, and collaboration is in the access we have to world-class medical research and the people involved in delivering this. Not only do we use the frontline professionals we work alongside as science capital, making pupils aware of the wide range of people and careers involved in their own medical care, but we also have these professionals come to the pupils and talk about their work, highlighting what happens in the corridors and rooms of the

Strongest structure challenge



hospital that they don't get to see. This direct contact with the people of science is such a powerful tool in engaging children with the subject and we are very fortunate to have the access we do.

The reality, however, is that every one of our pupils is isolated from the world outside of the hospital, some more so than others. Many of the pupils we work with cannot leave their hospital room during their admission. For those that can, their medical care will always come first. For all these children, their health will fluctuate during their admission. This means that no one child can guarantee that they will be able to engage in education for five days a week and, even if they do, for some it will be in complete isolation. This means that collaborating with their peers is difficult and, although we have ways and means that allow

us to do so, we can never replicate the feeling of being back in your class, in your school, with your friends, which most of our pupils will crave. This isolation is also then compounded by the restrictions imposed on how we educate our pupils.

Science in hospital schools also has more restrictions imposed on it than most; these include limited science equipment, the challenge of the spaces in which to work (most of our teaching is by a child's bedside), infection control measures (which everyone will now be, sadly, very familiar with) and movement restrictions, to name a few.

When you put these two opposing aspects of our work together; the inspirational collaboration and the restrictive isolation, this paradox creates a breeding ground for some incredibly creative practice. It is this understanding of how our environment shapes our work and the skill of our staff in working in this environment that both drew me towards the Great Science Share and made me keen to want to share this work, with the wider world, through a video.

A look ahead

Although the pandemic halted our work from March onwards, it is only a pause. The outcomes from the Science Week investigation were inspiring and creative enough to help me feel as though I had achieved what I was aiming for, even though we couldn't complete it fully. I certainly wasn't left feeling disappointed and staff shared positive feelings and comments about this year's experience. Now all I have to do is to reflect again, gather some staff and pupil feedback when possible and start to plan for next year! For me, it's not only the fact that two 'Greats' are better than one... what we find is there are many positive aspects to feeling part of the Great Science Share for Schools community, and I look forward to discovering what more we can do to improve children's science learning experience, even when in difficult times whilst in hospital.

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