



Cambridge Science Centre

Working together, we inspire the future generation in STEM



We are capturing hearts and minds

“The most innovative, exciting initiative addressing science capital issues I have seen in a long while”

Tim Coulson,
Former Regional Schools Commissioner,
East of England and North East London

INTRODUCTION

Young people are full of curiosity that, once encouraged and nurtured, knows no bounds. Cambridge Science Centre (CSC) feeds that natural curiosity, encouraging a lifelong passion and understanding of how science and innovation will increasingly impact on the world around them and inspiring them to believe in the part they can play.

Currently the most authoritative study of STEM engagement, the ASPIRES Report, shows that by the age of 11 the great majority of young learners have decided that STEM is “not for me”. Responding to this and to the need for far greater numbers of STEM skilled graduates, apprentices and professionals, CSC is specifically targeting learners from the ages of 7-14 years. And not just the young learners alone but, crucially, their families and teachers as well, to encourage a change in the perception of STEM subjects and inspiring and engaging future scientists, technologists, engineers & mathematicians

To date, Cambridge Science Centre have engaged with almost 400,000 young learners, their teachers and families through our multiple “touch point” outreach programmes and at our Science Centre in Cambridge. We are the only interactive, year-round science centre in the East of England.

As we move into the next exciting and challenging phase of our growth, we’re looking for an outstanding individual to join the board of trustees to help us shape our future effectively. You will have the opportunity to direct our vision and build a sustainable organisation to advance our goals of addressing the STEM skills gap and promoting social justice with equality of opportunity

Our trustees are all volunteers and are a hugely supportive team that offers the charity exceptional experience of technology, engineering, industry and education. Their hard work and significant contributions are highly valued by our staff and our supporters.

If you are looking for a role where you will make a very positive contribution to establishing the value of science, technology, engineering and mathematics as vital skills for day-to-day life and future careers, then please do get in touch, we do want to speak to you.

Learning by experience – it’s key



Cambridge Science Centre (CSC), an independent Science, Technology, Engineering and Mathematics (STEM) education charity, is devoted to inspiring young people with hands-on, experiences in STEM learning. In our Science and Technology led world we need more young people ready for careers in STEM. It’s essential to engage them in science beyond the classroom, so that they can find their place as the STEM professionals of the future. **We will all be much better for it.**

THE ISSUE

From the next advances in genomics to smart materials, transport to communications, and food to environment, in our inescapably technology advancing world, scientific literacy is key to health, lifestyle and wellbeing choices. Access to STEM education improves life opportunities by equipping young people with analytical thinking and problem-solving skills, preparing them to navigate - and empowering them to contribute to - their changing landscape. Employment in their futures will be increasingly dominated by the STEM sector.

Cambridge is a hub of scientific and technological excellence. However, this has not translated to a wealth of STEM engagement to support the surrounding regions. Parts of East Anglia rank among the most deprived in the country, particularly in education, skills and training. These areas have low rates of participation in higher education and low social mobility.

Companies are finding it increasingly challenging to find, recruit and retain the STEM talent, essential to their future.

To address these issues CSC aims to

- Spark** the scientific curiosity in every child
- Ignite** enduring passion for experimentation & discovery in everything
- Fuel** self-belief in those who doubt their own potential
- Illuminate** pathways into STEM education, opportunities & careers



Building science capital in this way achieves short term goals such as improving attitudes, increasing attainment and raising aspirations. In the longer term, it can increase uptake of STEM subjects that will address the STEM skills gap and engender equality of opportunity.

WHAT WE ARE DOING TO ADDRESS THIS

Cambridge Science Centre is focused on firing up the next generation of learners to be curious and inspired by STEM so that they can find their place as STEM professionals of the future. By offering outstanding, affordable and thrilling scientific experiences outside the classroom that young people and families do not have to travel far to enjoy we are also redressing the opportunity imbalance so that every child, whatever their background, will have equality of opportunity to engage with science-based subjects.

There is a considerable body of evidence that it is this practical learning experience that captures young imaginations and sets them on the path towards careers in science and engineering. Unfortunately, schools increasingly sacrifice science practical work because of safety concerns or lack of resources, yet young people have a real appetite and need for hands-on science. We have a proven track record of engaging young people in **actually doing science** and providing experiences that are beyond the reach of many schools.

Fostering a really positive experience of science and technology and changing perceptions of STEM subjects, increases take-up of these subjects at GCSE and higher levels. Our Centre and outreach activities are targeted at the 7-14 year-olds but also attracts a wider cohort of visitors, which is very welcome.

It is through the outreach programme that young people in this age group are most rigorously targeted. Not simply a one-off engagement, our flagship programme provides multiple 'touch points' (interactions) with young people, both in their communities as well as in school, to produce sustained STEM engagement.

We work with children, young people, and their families, schools, teachers and communities through a range of initiatives, producing high quality hands-on exhibits, shows & workshops to

- deliver where STEM engagement is needed most
- provide a flexible and scalable model with a low cost per serve
- bridge the knowledge/opportunity “wealth” of the Cambridge Cluster and schools and communities in the wider region

Our unique, purpose-built, hands-on exhibits are completely mobile, enabling us to transform an empty space into a hands-on science centre within a few hours. This is complemented by lively, dynamic shows and curriculum-linked workshops presented by our team of professional science communicators. This model is particularly effective at reaching young people who rarely or never interact with STEM outside school. The programmes repeat on an annual cycle to sustain young people’s engagement, thus creating long-term impact.

STEM ENGAGEMENT CONTINUES IN UNCERTAIN - a further burden on equality of opportunities

The closure of schools across the world at the end of the last academic year has no historical precedent and the impact is likely to be felt for many years to come. Sadly, another disruptive school year for many also seems inevitable.

No matter how adeptly teachers managed their remote learning programmes, they were not always able to replicate the dynamics of a school classroom. Engagement was not always the same for every young learner without the structure of the school day, particularly for children who do not have resources or strong family support. Consequently, as children are at very different points from where, under normal circumstances, they would expect to be and, crucially, from one another. The disparity between the advantaged and disadvantaged will almost certainly continue to increase without intervention.

Based on effectiveness of remote learning data from the World Bank, a recent report from the Sutton Trust states that for secondary school children from high socio-economic groups (SEGs), 60% of learning in lockdown was effective but for children in lower SEGs this was just 15%. A survey of teachers undertaken by the National Foundation for Educational Research in July indicated that the perceived learning loss in the least deprived schools was approximately 2.4 months compared to 3.7 months in the most deprived schools; a 54% difference. The Sutton Trust report further concludes that school closures will have a substantially negative labour market impact for those from less well-off groups, their chance of social mobility and the economy in general. Aggregating losses to students and the Exchequer across just the KS4 cohort of students, and assuming a 20-year persistency, the analysis suggests the total impact in England stands at ~£1.585 billion.

Through our work since lockdown in March we have learnt what has worked best during these turbulent times, what we have done well or where to improve or shift, excellent STEM communication, appropriate channels to use, refocused science capital best practice and how we can continue to offer lively, inspiring, exciting STEM programmes in the “new normal”.

SUPPORTING THE “NEW NORMAL”

Achieving just over 40% above plan in the first two months of 2020, March saw a swift change.

On Friday 13 March 2020 we welcomed more than 60 young learners to our Science Centre and science communicators were busy out on school roadshows engaging with more than 150 learners. The following day saw closure of schools and public locations, social distancing and lockdown. A full calendar of school visits to the Science Centre and outreach in schools and communities were cancelled or postponed indefinitely.

So – as we needed to adapt to changing circumstances and could no longer rely on person-to-person engagements with our audiences, we rapidly “pivoted” to find different ways to continue - to break down the barriers to STEM engagement and to show future generations that no matter who they are or where they come from, STEM opportunities can be ‘for them.’

From the announcement of lockdown and the closure of schools, the switch to digital media was intense and immediate across all areas of education. Families and young learners were overwhelmed by the enormous range and choice available to them. We therefore aimed to do



something that was different, filling in gaps in engagement and ensuring our STEM was trustworthy, interactive and fun; adapting our product portfolio has allowed us to meet our goals.

Our new initiatives are described below:

- i. **OpenUpScience** is a weekly themed, paper magazine packed full of exciting and inspiring STEM activities for children to do at home. Aimed at children who may find it hard to get online, we have been delivering 1,000 magazines to over 30 food banks and community enterprises each week.
- ii. **VirtualSchoolTrip** is our way of still letting schools have that “Trip-to-the-Centre” experience. Using school digital resources, teachers and students have access to a private page on the CSC website where they can watch two of our curriculum-based shows; a limited timeframe ensures a private “lesson”. We have been able to show to schools throughout the Summer Term, free of charge, giving young learners STEM enhanced learning and, as importantly, a change from the norm.
- iii. **Science@6** is a weekly YouTube programme with ~10 minutes of fun STEM including activities to do at home, competitions, quizzes, guest appearance videos and clips from parts of our shows or about our exhibits. This is lively and hands-on, very much in the “Blue Peter” style with solid science delivered in a less formal way. It is streamed every Monday at 6.00pm so that, at the end of the day, families can participate together and include parents as important role models.

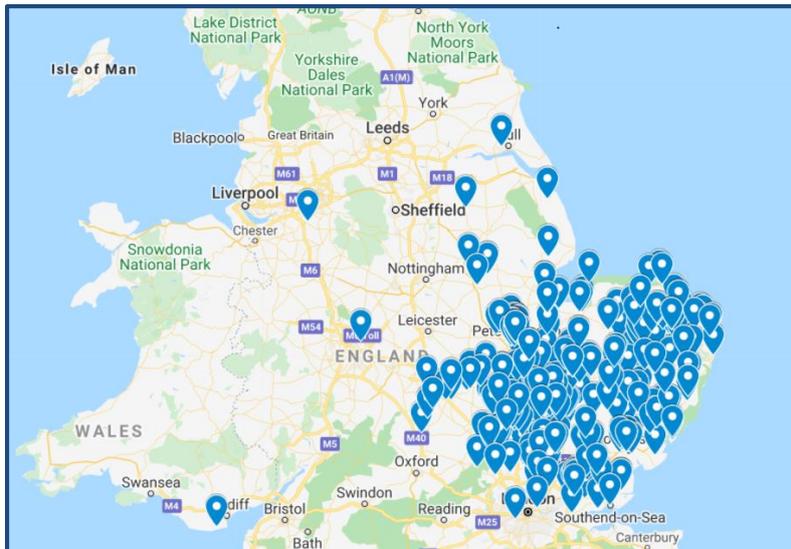
CSC Online and social media give access to hot news, ideas for STEM at home, fun facts and more to offer parents and children fun, outside and inside activities. Our followings and engagement rates have increased across all platforms.

As we moved towards the summer holidays, we adapted our output again, hosting **PopUp Science** in community settings across the region whilst COVID-19 requirements allowed, and publishing bumper editions of OpenUpScience with lots more STEM challenges to do at home.

To date, we are very proud to say that we have achieved the following outcomes:

- **OpenUpScience** distributed to **1,500** families in areas of deprivation each week and numbers continue to increase steadily. Partnered with 35 new community groups and charities.
- **VirtualSchoolTrip** 476 school registered, **>36,000** young learners have had access to the two shows, and **>42,000** children have also had access to a digital edition of OpenUpScience.
- **Science@6** achieved **92,059** views to date in 2020 and gained 500 new subscribers since March.

Distribution of VirtualSchoolTrip



Distribution of OpenUpScience



“I always thought that science isn't very important... But now I know everything is to do with science”

Girl, age 12



THE ROLE

Cambridge Science Centre is governed by a board of trustees that is responsible for ensuring we use our resources effectively to advance our charitable goals, and that we comply with all relevant charity, company, and other legal and regulatory requirements. To be effective, CSC's board requires a variety of skills and an appropriate mix of experience. Our board is a seat of challenge and inquiry that add value without meddling and ensure that the senior team are most effective.

As the advocate for Cambridge Science Centre, internally and externally, you must have a passion for inspiring the next generation and raising STEM aspirations.

As an ambassador for the organisation, you must be able to show that you can network effectively, building and maintaining strategic relationships with key stakeholders.

To be successful in this role, we would expect you to have:

- A commitment to the mission of Cambridge Science Centre and the time to contribute on a volunteer basis for at least a period of three years.
- An understanding of the responsibilities of a charity trustee
- High levels of personal integrity and ethics
- Good, independent judgement, political impartiality, and the ability to think creatively in the context of the organisation and the external environment
- The ability to constructively and critically challenge as part of a team.
- The ability to think strategically about the charity's mission, priorities, and values, using data and evidence effectively to inform decisions.
- Significant hands-on experience of management in a senior role

Specific experience that we are seeking include:

- An established voice for STEM engagement in young learners and with key opinion formers and decision makers
- Development of key partnerships
- Public engagement and education
- Governance (particularly fundraising and data regulation)
- Local government or local enterprises representation

Ideally you will also have the following:

- Experience as a non-executive in either a commercial or charitable context
- A knowledge of current trends in informal learning

The appointment will be for an initial three-year term of office with the potential for an extension for a further two, three-year terms. Board meetings are held once every two months at the Science Centre in Cambridge. The board has a small number of sub-committees, including Pay and Remuneration, Audit and Fundraising. Beyond the board and committee meetings, trustees are encouraged to visit CSC activities, attend special events, and work with staff on particular areas of expertise.

[FOR FURTHER INFORMATION, including copies of financials and annual reviews](#)

Please do not hesitate to contact Helen Slaski, CEO

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