



Cambridge Science Centre

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

THE ROLE

Cambridge Science Centre (CSC) 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. Our trustees 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.

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 and data regulation
- Marketing and digital media strategy
- 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.

As we move into the next exciting and challenging phase of our growth, we're looking for outstanding individuals 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

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.

FOR FURTHER INFORMATION, including copies of financials and annual reviews

Please do not hesitate to contact Helen Slaski, CEO

e: helenslaski@cambridgesciencecentre.org t: +44 (0)7765 250049





INTRODUCTION

In existence since 2013, Cambridge Science Centre is the only year-round, interactive children's science centre in the East of England. Our vision is of a world where every child can experience adventures in science, technology, engineering, and maths (STEM) that inspire them to do well in their life and make a positive contribution to their communities. We achieve this through fun and intriguing hands-on science interventions, rigorously tested science exhibits, and engaging online content delivered by our world-class science communicators.

We believe that children need to know how to embrace diverse points of view and work together without fear of failure. This is what we nurture at CSC – through every programme, activity and experience. We complement and expand on school learning, we give learning practical and real-world context, and we make science more accessible and equitable.

Through our science centre and outreach programmes, CSC works to break down barriers to STEM participation and to show future generations that no matter what their socioeconomic background, gender or ethnicity, STEM is exciting and inclusive and can be for them! Cambridge has an unrivalled scientific heritage. We are very fortunate to be based in one of the best places in the world for STEM learning and innovation, enriched by vibrant technology and life-science industries on our door-step.

However, many companies are finding it increasingly challenging to find, recruit and retain the STEM talent essential to their future and, whilst Cambridge is a hub of scientific and technological excellence, this has not translated to a wealth of STEM engagement throughout the surrounding regions. Parts of the East of England rank among the most deprived in the country, particularly in education, skills and training¹ and have low rates of participation in higher education² and low social mobility³. Some affluent areas, including Cambridge, are social mobility 'cold spots', where the education system fails to offer the best opportunities to children from lower income families. These 'cold-spots' exacerbate the issues uncovered by the ASPIRES Report⁴, a cornerstone analysis of STEM learning, which shows that **by the age of 11 years, the majority of young learners have decided that STEM is 'not for me'**. Access to STEM education improves life opportunities by equipping young people with analytical thinking and problem-solving skills, preparing them to navigate their changing landscape and empowering them to contribute in future employment that will be increasingly dominated by the STEM sector. 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.

There is a considerable body of evidence that it is practical learning experiences that captures young imaginations and sets them on the path towards STEM careers. Unfortunately, schools increasingly need to sacrifice practical science work even though young people have a real appetite and need for hands-on science. To counter this, CSC aims to provide children and families with those life-changing "Wow!" moments that show that STEM is exciting, inclusive and can be **'for me!'**

We have delivered inspiring STEM engagements to over **430,000** people since we opened in 2013. Our programmes are targeted at the 7-13 year-olds but also attracts a wider cohort of visitors, which is very welcome. In particular, we focus on young learners in areas of Multiple Social Deprivation who have been shown to be most at risk of missing out on STEM participation.

¹ Indices of Multiple Deprivation 2015 (IMD)

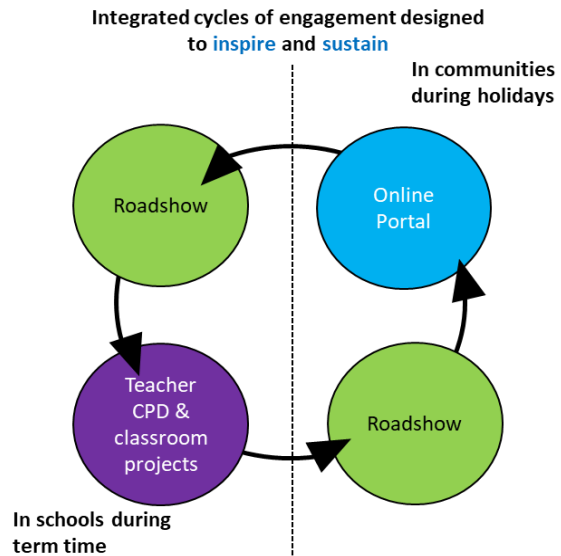
² (POLAR4, 2017)

³ Social Mobility Commission, 2017

⁴ ASPIRES Young people's science and career aspirations age 10-14" – a report produced by King's College London and Department of Education and Professional Studies published in December 2013

WHAT MAKES US DIFFERENT

Our distinctive approach offers multiple 'touch point' interactions with young people, not only at our permanent Science Centre in Cambridge but also taking our science centre “experience” out to communities during holidays, and in schools for a week during term-time. This enables us to reach groups of young people up to three times per year and deliver **sustained engagement**, critical in reinforcing the STEM message. Working in both settings, also provides access to teachers and family members as important role models. This model is particularly effective at reaching young people who rarely or never interact with STEM outside school.



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.

Whilst we provide fun, entertaining STEM experiences, we go beyond this, fostering a really positive experience of science and technology and changing perceptions of STEM subjects. 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.

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.

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

See us in action here – <https://youtu.be/ATTgCV-uBbs> and <https://youtu.be/S0kLloveGDO>

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

It's no secret that the past year has been incredibly challenging for children; the closure of schools across the world as a result of the COVID-19 pandemic has no historical precedent and the impact is likely to be felt for many years to come.

The ongoing disruption to education has put many children at risk of educational poverty and most particularly for children who do not have resources or strong family support. The Children's Commissioner for England has commissioned a once-in-a-generation 'Beveridge Report for Children' on the future of childhood. An initial report has calculated that, collectively, pupils in England have lost 840 million days of in-person schooling since the start of the COVID-19 pandemic, representing about 19 weeks each¹.

Today's young people are the first post-war generation to be less well-off than their parents. It is clear that without intervention and support, many children will not go on to realise their full potential. But, now more than ever, the world needs young people who are equipped to tackle the toughest challenges facing our planet. STEM subjects will be foremost in addressing these.

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 they returned to the classroom, children were 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 2020 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.

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 hard copy STEM magazine – OpenUpScience - is distributed via charities and social enterprises, ensuring that we reach children most in need of additional support and educational enrichment in these difficult times. Our new initiatives are described below:

- i. **OpenUpScience** is a weekly themed, paper and digital magazine packed full of exciting and inspiring STEM activities for children to do at home. Hard copies are specifically aimed at children who may find it hard to get online, we are delivering over 3,000 magazines to over 59 food banks and community enterprises every fortnight.

- 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”. During lockdown and distanced learning, we were able to send these out to schools free of charge, giving young learners STEM enhanced learning and, as importantly, a change from the norm. Schools are now continuing with these on a paid-for basis and we are developing a range of other products alongside the films to build a VirtualSchoolTrip suite.
- iii. **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.

IMPORTANT NUMBERS

- Over 90% of teachers would recommend our VirtualSchoolTrips to another teacher⁵
- Over 90% of teachers rate us 8/10 or higher on the overall experience, the content covered, and the quality of the communication at in-person roadshows⁶
- Teacher feedback showed 97% reporting 8/10 or higher for our digital OpenUpScience
- In a recent study there was a 50:50 split of girls to boys across all events.⁷
- In 3/4 schools included in the study, families’ aspirations with regard to science increased. In the 4th school, aspirations remained level. In all schools visited, student confidence increased between pre- and post-interventions⁸

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

Girl, age 12

⁵ CSC Teacher feedback (106 respondents, April 2020 to January 2021)

⁶ Teacher feedback from 6 CSC School Roadshows (214 respondents) that ran between Sept 2019 & March 2020

⁷ CSC project with GCGP LEP (2017-2019) Data on 2,086 young learners and their teachers and families from the 2-year pilot of a multiple intervention model for STEM outreach across 4 locations in East of England

⁸ As in 6 above