

# THE BIG BANG FAIR

2023 evaluation report



The Big Bang Fair is the UK's largest free celebration of science, technology, engineering and maths (STEM) for schools. The Fair aims to inspire, inform and empower young people to consider engineering, technology and other STEM careers by showcasing a wide range of STEM employers and jobs.

## ABOUT THE FAIR

The Big Bang Fair aims to inspire the next generation with hands-on activities, careers panels and workshops. In 2023, we had over 50 activities for the young people to engage with, as well as a schedule of wow-factor science shows on a main stage. The event, aimed at 10 - 13 year olds, is designed to last no more than 3 hours for school groups and showcases a wide range of STEM employers and career possibilities.

### Accessibility

The Big Bang Fair's mission is to inspire young people across the UK to pursue STEM careers, and we're dedicated to making the event inclusive and accessible for everyone. We provided schools and visitors with a comprehensive accessibility guide, which includes a visual story designed to support autistic young people in preparing for the event. We worked closely with the venue, our event agency, and supporters to ensure physical accessibility throughout The Fair. To make the experience more comfortable, we created a designated calm area with cushions, soothing lighting, and fidget toys for those who may find the event overwhelming. Additionally, we made sunflower lanyards available for disabled attendees and volunteers, allowing them to access queues and calm areas more easily.

### Sustainability

In 2023, we took several steps to improve the sustainability of The Big Bang Fair, including adding water refill points to limit single-use plastics on site and ensuring all our printed materials are on recycled, FSC certified and carbon balanced paper. We monitored our own carbon footprint and developed a guide to share with schools and supporters to help them limit theirs when attending the event as well as providing guidance on how to design and build stands to make sure they are as environmentally friendly as possible.

## ABOUT THIS REPORT

Almost 16,000 young people and 2,300 teachers attended The Big Bang Fair in 2023. This report provides findings from surveys conducted with students and teachers who attended The Fair. The purpose of the surveys was to collect feedback from participants, with the aim of gaining a better understanding of their experiences of The Fair and whether it influenced their interest in pursuing more STEM activities or careers in engineering and technology.

In this report we explore young people's experience of The Fair and whether there are any differences in experience based on demographic characteristics and prior STEM engagement. Furthermore, we seek to understand students' interest, views, and knowledge of STEM related careers to find out more about who is participating in The Big Bang Fair.

This information allows us to gain an understanding of the extent to which we are meeting the aims of The Big Bang Fair in terms of informing and inspiring young people into further STEM education and careers. It also contributes to our ongoing efforts to improve and develop future programmes, as well as to support EngineeringUK's wider work on STEM engagement.

In June 2023, we collected data from more than 2,400 students and nearly 300 teachers through our evaluation surveys at The Big Bang Fair. The findings from our evaluation are presented in this report.

## DELIVERY: CHANGES TO THE FAIR

In 2023, changes were made to the way The Fair was delivered following feedback from teachers, students and other stakeholders to improve the event and ensure it meets its objectives.

- **Half-day sessions:** School groups could now attend The Fair in half-day sessions instead of full days, creating a more condensed experience and accommodating more students
- **State-funded schools:** Only state-funded schools could attend The Fair, with the intention of reaching more young people from groups underrepresented in engineering professions
- **Lower age range:** The age range was adjusted to include year 6 primary students, based on feedback from teachers and acknowledging that these students would soon be transitioning into secondary school
- **Smaller group size limits:** Group sizes were capped at 75 visitors per session to ensure that all students could partake in shows, workshops, and activities
- **Teacher Hub expansion:** The Teacher Hub which is an area designed to give the visiting teacher's an opportunity to network with each other, as well as find out more from teacher-facing organisations, such as Neon and STEM Learning, was expanded.

## Attendance rates

In 2023, we saw an unexpectedly high number of schools make bookings and then either cancel at the last minute or not attend The Fair. The young person attrition rate for 2023 was 39%, meaning almost 40% fewer young people attended than we were expecting. This is much higher than the attrition rate for The Big Bang Fair 2022, which was 23%. In order to gain some insight into this trend, we reached out to all those who didn't attend, asking them why and for some more information. The survey findings indicated that the main barriers to attendance were:

- Coach, parking and attendance costs
- Getting staff resource to effectively cover the trip
- Getting sign-off by Senior Leadership Team
- Coach companies cancelling bookings
- Organising the trip internally

Some of these reasons for schools not being able to attend the event are out of our control and more related to the local context. However, there are areas where EngineeringUK may be able to provide additional support or information that may be helpful for teachers - for example in organising the trip internally or getting sign off by their Senior Leadership team.

## EVALUATION: KEY FINDINGS

**The Big Bang Fair is an engaging and enjoyable experience for students.**

- 88% of students agreed with the statement “I am enjoying The Big Bang Fair”, with 57% strongly agreeing
- 97% of teachers agreed that The Big Bang Fair was engaging for their students
- 91% of teachers agreed that The Fair is accessible to students of all abilities in STEM subjects

**Having spent time at The Fair, students were inspired to do more STEM activities and learn more about STEM careers.**

- 71% of students agreed with the statement “The Big Bang Fair has made me want to do more science, technology and engineering activities in the future”
- 73% of students agreed with the statement “The Big Bang Fair has made me want to find out more about engineering, science or technology jobs”

**Teachers also have a positive experience of The Big Bang Fair.**

- 96% of teachers rated their overall experience of The Fair as being excellent (63%) or good (33%)
- 95% of teachers agreed that The Big Bang Fair has highlighted the variety of careers in engineering and technology
- 92% of teachers agreed that The Big Bang Fair has clear links to the curriculum

**Teachers feel more confident to advise students about STEM careers having been to The Big Bang Fair.**

- 70% of teachers said they are more likely to suggest a career in engineering to a student after attending The Big Bang Fair
- 67% of teachers felt more confident in speaking to their students about careers in engineering having attended The Big Bang Fair

## RECOMMENDATIONS

**These findings highlight the success of The Big Bang Fair's current format and content, with positive feedback from teachers and students.** While no major changes are necessarily required, the evaluation did highlight some areas to consider for future delivery. The following recommendations are based on the findings and conclusions presented in this report:

- 1. Enhance engagement across student groups.** Acknowledging varying levels of prior STEM engagement among young people, strategies could target those less involved or new to STEM initiatives. Tailored activities and messaging could enhance engagement across diverse backgrounds and prior STEM engagement levels.
- 2. Promote inclusivity and support underrepresented groups.** Continue efforts to support students from underrepresented backgrounds in STEM, fostering their confidence and motivation to pursue STEM careers. Provide additional guidance and resources tailored to STEM career paths, with an emphasis on supporting girls and building their confidence in STEM skills.
- 3. Enhance accessibility and inclusivity.** To improve the experiences of disabled students, consider feedback from teachers, such as including advance warnings about loud noises or offering noise-cancelling headphones. Ongoing efforts should continue to enhance accessibility and ensure an inclusive experience for all participants.
- 4. Support schools in overcoming barriers to participation.** Understanding the reasons behind schools' inability to attend and taking steps to support and encourage participation is crucial. Continued efforts should be made to identify and address specific challenges faced by schools and students, utilising insights to achieve higher attendance rates and a more inclusive event.

These recommendations aim to build on the strengths of The Fair, ensuring an inclusive, inspiring, and effective STEM engagement event for all participants.