

Case study: Robotics Challenge 2018-2019

Client: Engineering UK

The Challenge

The Tomorrow's Engineers EEP Robotics Challenge has been running since 2015, growing from 25 schools to over 575 schools taking part nationally by September 2018. The curriculum-linked programme sees student teams from across the country learn how to build, programme and control robots to compete in a series of short, exciting missions, culminating in a regional competition day and the national final hosted at the Big Bang Fair. With the growth of the Challenge, the management and delivery of the programme needed to be restructured. A delivery partner was therefore needed to take over school communication and competition planning across England.

Our challenge: To support Engineering UK with the delivery of the programme across England and facilitate a shift towards a delivery partner approach.

Our Solution

Our solution involved working closely with Engineering UK on the project to ensure consistency for schools, venues and other stakeholders who had been involved in the programme over the previous years. This included:

- Full training of our delivery team on the programme
- Introducing ourselves to schools at teacher training days and through clear communication via email
- Initial venue planning meeting with Engineering UK
- Co-delivery of the first competition day with Engineering UK
- Regular check-in calls with Engineering UK
- A shared drive to store all databases and materials

In addition, by taking on a delivery partner role within the programme, we were able to streamline several key elements of the programme by utilising our internal skills and resources. For example, designating:

- A Programme Lead to manage all competition planning and ensure consistency in the events
- A dedicated delivery team responsible for all event logistics including delivery of materials, removing the previous need to courier materials
- A dedicated school administrator to manage all school communications

Across 2018-2019 we delivered 7 teacher CPD days and 16 regional competition days. The competition days are the culmination of the programme, which is carried out independently by schools across the academic year, usually as part of an after-school club. We developed a clear structure and process for the competition, which could then be adapted based on the number of schools attending (anything up to 21 schools), the space available and number of volunteers involved on the day and replicated across all regions. These were held at various exciting STEM-related locations across the country, including Salesforce Tower in London, Rolls-Royce in Derby and RAF Scampton, the home of the Red Arrows.

Each competition day involved:

1. A welcome
2. A robot speed challenge activity
3. A rotation of short 10-minute judged activities
4. A dedicated lunch window
5. Presentation of awards
6. External volunteers and STEM Ambassadors to support the event (particularly the judging)

10:00	10:30	11:00	12:10	12:40	13:50	14:10	15:00
Welcome and intro	Speed challenge	Teams complete a carousel rotation of 10 minute judged activities	Lunch	Teams continue carousel rotation of 10 minute judged activities	Judges deliberation	Awards presentation	Teams depart

In total, 127 school teams attended a competition day, with 25 of those selected as UK finalists.

Feedback

'We had a fantastic day at Renishaw today, all the students loved the competition. It was so well organised; the staff were lovely with the students and the day was exciting from start to finish. This has been such a valuable process for them and thank you to everyone who has been involved in the challenge planning and preparations for the competition and everyone involved today'

Teacher, Malmesbury School

How did this event hit the Gatsby Benchmarks?

The event adhered to the following Gatsby Benchmarks for good careers guidance:

2. Learning from career and labour market information

Through engagement with local employers and organisations through the competition days and STEM Ambassador mentoring, students picked up information on the types of STEM careers available within their local area as well as nationally.

4. Linking curriculum learning with careers

The Robotics Challenge links topics in the National Curriculum, particularly in physics, IT, maths and D&T, to careers in engineering and robotics.

5. Encounters with employers and employees

Students taking part in the Robotics Challenge had the opportunity to interact with employers through visiting venues and having a 'tour' of the site, as well as meet employee representatives and STEM Ambassadors.

7. Encounters with further and higher education

Many of the competition venues were FE and HE providers, for example Farnborough College and the National College for High-Speed Rail in Doncaster. Students picked up information on the range of courses and qualifications available with these providers.

