

We Can Be: Engineers

Luton and Bedfordshire

Big Ideas Impact Report, July 2025



Introduction

In May 2025, Big Ideas, with the support of RAF Youth STEM, delivered We Can Be: Engineers, an inspiring, hands-on, digital engineering experience designed to connect students across Luton and Bedfordshire with local STEM opportunities.

Through live sessions, storytelling, and a practical challenge, the programme empowered primary and early secondary school students to see themselves as future engineers.

This event was strategically designed to link classroom learning with local employment opportunities in aviation, aerospace, and engineering, particularly near Luton Airport, while introducing Cranfield University as a regional centre of innovation.

Programme Aims

1. Raise awareness of engineering careers among pupils in Luton and Bedfordshire.
2. Connect students to real-world engineers and pathways.
3. Deliver fun, curriculum-linked learning via digital channels.
4. Promote opportunities linked to the local aviation and aerospace sector.

Programme Information

- Delivered live on 21 May 2025 with morning and afternoon sessions.
- Over **2,000 pupils** from across Luton and Bedfordshire participated.
- **100% of teachers** reported that the workshop broadened their students' perceptions of engineering jobs and careers.
- **All students engaged** in an aeroplane design challenge exploring sustainability, structure, and purpose.
- Our guest speaker was **Neil Williams, Civil Aviation Authority, former RAF aeronautical engineer**.
- Two winning schools from areas of deprivation received a free visit to **Cranfield University's Flying Classroom** in July 2025.



Event Delivery

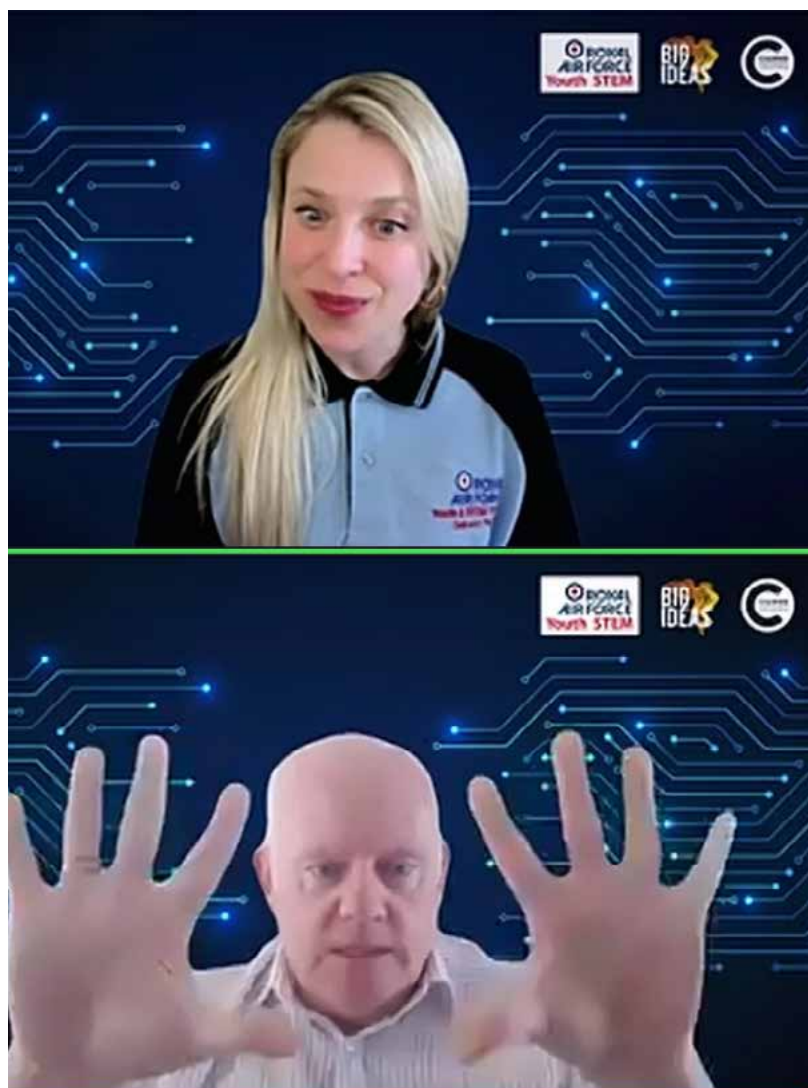
The digital workshops were designed to be highly interactive and engaging, creating an environment where students could explore engineering in fresh and exciting ways. Through a mix of live discussion, real-world insights from industry professionals, and imaginative challenges, participants were encouraged to think creatively and ask bold questions. The sessions sparked lively curiosity, with students eagerly sharing ideas and demonstrating their enthusiasm for engineering careers, with many even continuing their exploration beyond the workshop itself.

“It was good for the children to hear from someone doing the role and to have the chance to think about designing themselves, thinking about what they needed to consider. Lots of productive chatter created!”

Teacher, Springfield Primary School

Guest Speaker Spotlight and Impact

Neil Williams, a leading trainer at the Civil Aviation Authority and former RAF engineer, captivated students with powerful stories of responsibility, risk, and reward in the field of engineering. His message highlighted the creative and collaborative nature of the profession, the exciting future of sustainable aviation, and the fundamental role engineers play in solving real-world problems that matter. Williams’ clear and personal narrative resonated deeply with students, particularly those who had never met an engineer before, making a lasting impact and broadening their understanding of what a career in engineering can look like.



Student Engagement

Word Cloud Activity

In response to the prompt “Engineers are good at”, students had the following suggestions for the group:

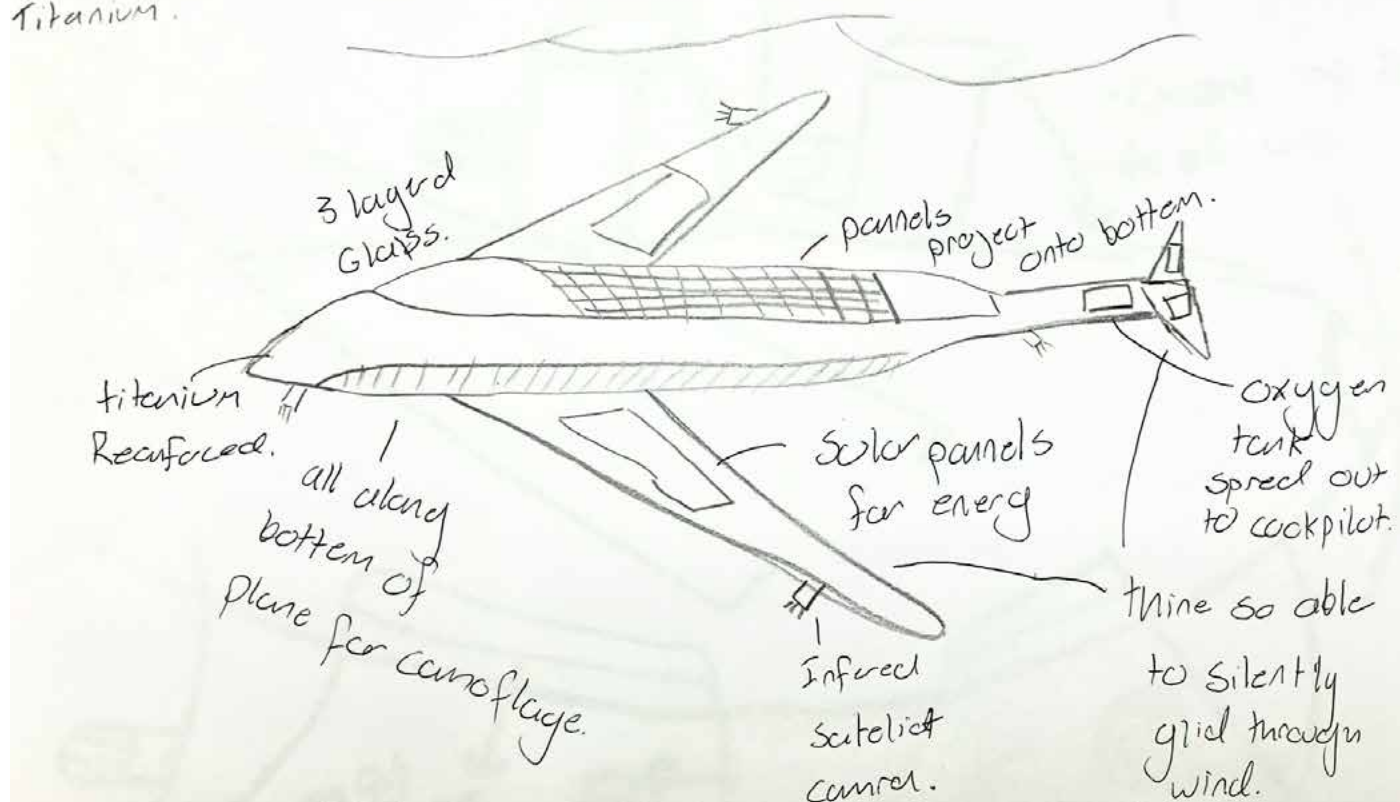


This spontaneous activity highlighted how students already perceive engineering as both technical and creative, and revealed a foundation on which to build deeper awareness.

Engineering Design Challenge & Immersive Experience Follow-up

As part of the workshop, students were challenged to design the “aeroplane of the future,” taking into account critical considerations such as environmental impact, structure and function, materials, innovation, and accessibility. This task encouraged young people to think like engineers, applying creativity and problem-solving skills to tackle real-world challenges in aviation. The resulting submissions showcased impressive imagination and insight, from solar-powered aircraft to modular passenger planes designed for rapid emergency response.

Solar power.
Titanium.



Student design, Ernulf Academy





Examples of prototype aeroplanes submitted by students from Ernulf Academy, Hillsborough Primary School and Kymbrook Primary School.

"I was really impressed with the prototypes the children brought. They came back in from Half Term and lots of them had built things over the holiday."

Teacher, Hillsborough Primary School

Two schools were chosen as the winners of the all expenses paid trip to Cranfield University, Lealands High School and Hillsborough Primary School, both schools have high percentages of children who receive free school meals and are from deprived areas. During the visit, students took part in hands-on activities including building an aircraft wing, exploring the university's unique Flying Classroom, and interacting with real aviation tools and trainers. This practical exposure provided students with a deeper understanding of engineering in action and a memorable glimpse into potential future careers in STEM.



Teachers at the two winning schools fed back about the experience

“It’s so important to show the students opportunities for the future and not let the local community aspirations limit them. We are sculpting their futures.”

Teacher, Lealands High School

“Experiences such as these open children’s eyes up to what exists - You cannot be what you cannot see! We push careers early on in our school, it’s about finding everyone’s passions. We are very good at teaching core subjects at our school but it’s opportunities like this which provide excitement for the children.

I will take away the things I have learnt today into my teacher. I will use the experiment we have done today in my classroom with the other children.

Two of our students have never been on a plane before, but if you asked across our whole school I think the number would be a lot higher. Our school is in a deprived area, we have a mix of children at our school.”

Teacher, Hillsborough Primary School

Students on the prize trip experience were excited to share their thoughts on engineering, and their hopes for the future with the Big Ideas Team:

“I love engineering because I like making stuff, I have many skills! I would like to be an architect and design buildings. Everything has been very interesting today - I really like the Engines and the F1 Cars!”

Student, Hillsborough Primary School

“I like engineering because it makes me creative”

Student, Lealands High School

Teachers also expressed how the travel bursary was essential and was the only way they would be able to attend a trip like this one:

“The travel bursary is essential. It’s difficult to justify the cost to parents, especially when lots of trips are taking place towards the end of term.”

Teacher, Hillsborough Primary School

“We wouldn’t have been able to come on this trip without the travel bursary.”

Teacher, Lealands High School



Teacher and Student Feedback

A follow-up survey was completed by teachers one month after the event. Responses indicate clear impact on student attitudes and teacher engagement:

- **100% of teachers** said they are now more likely to discuss engineering careers with their class
- **75% of teachers** reported an increased interest in engineering among students after the event
- **100% of teachers** reported that the workshops broadened their students' perceptions of engineering jobs and careers.

“Pupils all too often express their desires to become ‘Youtubers’ or footballers, so it is really encouraging that they are introduced to possible future employment in exciting fields such as those that come under the STEM umbrella. For many pupils before the input they would have been unaware of what the word engineering meant. This is no longer the case.”

Teacher, Hilborough Junior School



Legacy and Next Steps

Following the success of the event, Big Ideas and RAF Youth STEM will:

- Expand the programme to **Middlesbrough in Autumn 2025**, continuing this regional model
- Develop **new engineering challenges** aligned with local job markets
- Strengthen partnerships with **local institutions** and **careers hubs**

Recommendations for future events:

- Include pre-event teacher briefings and resource packs
- Offer sustained engagement through RAF STEM Ambassadors
- Increase visibility of female and underrepresented engineers as role models

Conclusion

We Can Be: Engineers – Luton and Bedfordshire offered over 2,000 students a bold, joyful invitation into the world of engineering. With strong links to local opportunities, national skills goals, and a compelling guest speaker, the programme left a lasting impression on young minds.

“If you get stuck, don’t guess.
Find someone to help you. That’s
teamwork.”

Neil Williams

Big Ideas and RAF Youth STEM thank the councils, schools, and educators who helped bring this vision to life, and look forward to continuing the journey.



Find out more www.big-ideas.org