Hutton Sixth Form

STEM Plus Christmas Lectures 2025

4th, 11th and 17th December 2025

STEM Plus at Hutton Sixth Form

The STEM Plus programme at Hutton Sixth Form gives students the opportunity to explore science, technology, engineering and mathematics far beyond the classroom and examination syllabus. Designed to inspire curiosity and ambition, the programme helps students discover the breadth of opportunities available within STEM-related pathways.

Students can choose to take on a variety of roles within STEM Plus. Some become STEM ambassadors and leaders, representing the programme and helping to promote STEM across the school, while others enjoy supporting younger pupils through lower school and primary outreach events. These experiences help develop confidence, leadership skills and a strong sense of responsibility.

Every STEM Plus student is also paired with an industry mentor, providing invaluable guidance on university applications, apprenticeships and future employment. In addition, our Year 12 work experience programme offers hands-on placements within industry, allowing students to gain real-world experience and insight into STEM careers.

Together, these opportunities ensure that STEM Plus students are well prepared, well informed and ready to take their next steps beyond Hutton Sixth Form.

Programme Benefits

Personalised STEM Mentors

Receive one to one guidance from industry professionals who inspire and support your STEM ambitions.

Christmas Lectures

Take part in sessions led by top scientists, engineers, and innovators from academia and industry.

STEM Conference Day

Join exciting talks and workshops exploring the latest STEM developments and innovations.

Work Experience Placements

Gain valuable, hands-on experience in STEM related industries to enhance your skills and future prospects.

Primary Liaison

Inspire younger pupils through primary school STEM lessons, developing your leadership and communication skills.

Christmas Lectures 2025

We were privileged to host three external speakers from the world of STEM as part of the Hutton Sixth Form Christmas Lectures 2025. These sessions offered our GCSE and A Level students valuable insights into the wide range of opportunities available within STEM. This is only the beginning. Many more events are planned as part of our STEM Plus programme throughout the year.

Members of the group have written reports on the lectures.

Formula One: STEM, Sport or Business?
With James Allison - Technical Director, Mercedes AMG PETRONAS F1 Team

Thursday 4th December 2025
Written by Anton B, Year 12, Hutton Sixth Form STEM Leader

As part of our STEM enrichment programme, we welcomed James Allison, Technical Director of the Mercedes Formula One Team, who delivered an engaging lecture on how Formula One functions and the careers that support the sport.

James began by explaining that Formula One operates through three key organisations. The FIA acts as the governing body, creating and enforcing regulations. The Formula One Group manages the commercial side of the sport, including promotion, broadcasting, and race events. Finally, the teams design, build, and race the cars, operating as large organisations that combine engineering excellence with business management. Teams receive funding through a variety of income streams, including sponsorship, prize money, and commercial revenue, with budgets often reaching hundreds of millions of pounds.

He then discussed the range of careers within Formula One, highlighting the importance of business and commercial roles in maintaining sponsor relationships, managing finances, and ensuring long-term competitiveness.

A key part of the lecture focused on aerodynamic development and idea progression. James explained that an aerodynamicist may propose an idea which is first reviewed by the team. If it is not promising, it is discarded. If approved, it is tested using a supercomputer, and only successful results progress to the wind tunnel, where the same evaluation process applies. Although physical testing is heavily restricted, teams can use AI-based simulation, which is often more effective than human judgement and allows ideas to be tested without the same limitations.

James concluded by emphasising the importance of team spirit and collaboration, explaining that strong communication and trust across the team are essential for success in Formula One. Overall, the lecture was informative and inspiring, providing a clear insight into the sport as both a technological and business-driven industry.

The Incredible Hulk. Going Green in the Modern World
With Dr John McNally CEO Project One (INEOS)

Thursday 11th December 2025
Written by Monica P, Year 13, Hutton Sixth Form STEM Ambassador

This week, we welcomed guest speaker Dr John McNally, who spoke about his work at Project One, currently the only project in Europe focused on cracking ethane sustainably. The talk offered insight into an advanced industrial development that aims to balance progress with environmental responsibility.

Dr McNally described how the project site is being built and outlined the many challenges involved in its development. In particular, he discussed the political challenges surrounding the transportation of materials. One major problem he spoke about was choosing between shipping goods through the Red Sea, which carries the risk of sinking due to political instability in the area, or taking a significantly longer and more expensive route around it. This highlighted how global politics can directly impact large-scale engineering projects.

Dr McNally also spoke about the widespread use of plastics and their importance in everyday life, from medical equipment to packaging, construction and household items. He emphasised that while plastics are often criticised for their environmental impacts, they remain essential to society. This reality, underlines the urgent need to produce Ethene — a core component in plastic manufacturing — more sustainably.

Overall, the talk was incredibly thought-provoking, giving us a clearer understanding of both the difficulty involved in developing sustainable solutions and the importance of innovation to meet future environmental challenges.

Ghosting gas and oil: it's more complicated than that. We still need energy and things. With Dr Peter Williams, Group Technology Director & Head of Investor Relations, INEOS

Wednesday 17th December 2025
Written by Eleanor A and Molly W-B, Year 12, Hutton Sixth Form STEM Ambassadors

On Wednesday the 17th of December, Hutton was privileged to hold the last of our Christmas Lecture series, 'Ghosting Gas and Oil: it's more complicated than that.', delivered by none other than Dr. Peter Williams.

Throughout the lecture, Dr. Williams talked us through the challenges faced with expectations to reduce carbon dioxide emissions whilst also meeting ever increasing demands for energy. The lecture provided interesting food for thought regarding sustainability within energy production as Dr Williams talked us through INEOS's steps to capture carbon dioxide and store it in previous oil sites deep in the North Sea. Dr Williams also explained how often governments and larger organisations tend to make it seem like we must do all or nothing and change all our energy sources to renewables, however we need to do everything in conjunction in order to ensure that energy sources will be sustainable and reliable for the future energy demand.

We also heard some interesting examples of recycling; such as using beards from muscles to spin synthetic fibres to make insulation boards! Dr Peter Williams made sure that the lecture was informative, listening to many queries from students and staff so that everyone understood his information.

On behalf of everyone at Hutton, we'd like to give a big thanks to Dr Peter Williams for this amazing opportunity and chance to learn about STEM outside of our curriculums!