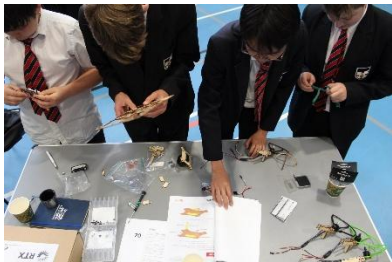


STEM update Autumn term1

Raytheon Quadcopter challenge - From the end of the last academic year, four current year 9 students have been competing in the Raytheon sponsored RTX quadcopter challenge. Having successfully submitted their online presentation, the students have attended many lunchtimes and after school sessions, aided by Orlando, and have also participated in the build and fly day held at St Marks school in Harlow. During the build and fly day, the students were given a basic kit to assemble a quadcopter and had a successful first flight under the supervision of the Raytheon mentors. The students have now completely redesigned the quadcopter to their own design, incorporating elements inspired by Dr. John Hinds, who advocated tirelessly for a rapid medical response and air transport system to close critical trauma care gaps in Northern Ireland. The journey is also very personal to one of the boys whose own mother had a cardiac incident a short time ago.

Summary:

- lunch club – Tuesday lunch, Tuesday after school
- presentation (online then in person to industry judging panel)
- St Marks build and fly day
- Regional final (early November)
- National final (mid December)?



STEM Robotics - STEM Robotics now takes place on a Monday and Friday both at lunchtime and after school. There are four teams currently attending, representing KS3 and KS4.



The students have so far learned the system, built drivebases and are currently experimenting with mechanical linkages that are designed to manipulate irregular objects and place them onto stacks. The club is supported by three sixth form volunteers as well as giving DoE students the opportunity to record the skills element of their award.

The next stage is the registration of teams and to offer the opportunity to compete in the national VEX robotics competition or league.

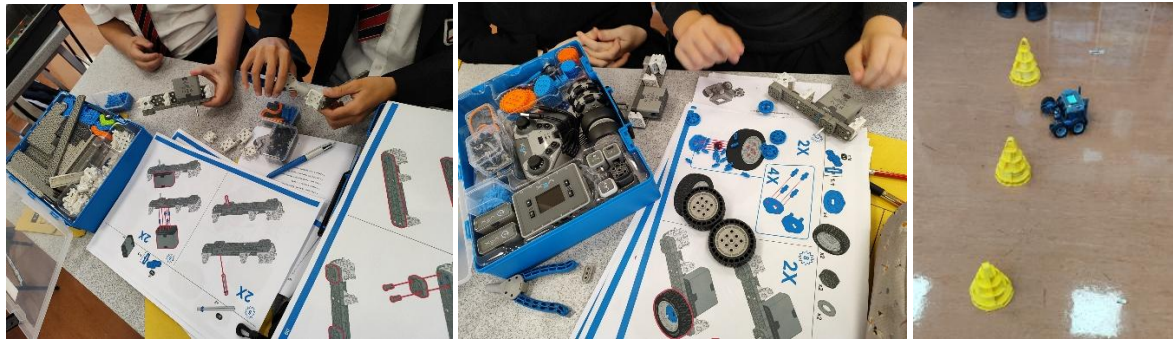
Two of the teams are also supported by MBDA who have provided two of the kits and will fund the registration of these two teams for entry into the wider VEX competition.

Summary:

- lunch club – Monday lunchtime and after school, Friday lunchtime and after school
- regional league or event
- national final (late February 2027)
- mentorship from MBDA apprentices

Curriculum robotics - Robotics has been introduced into the curriculum in year 9 and the results of the first rotation were on display at the recent open evening.

Students are being taught how AI and automation have impacted the workplace and the skills that may be needed in the future. The outcome has been a group lead project where students have created a fully functioning autonomous robot that completes basic tasks, similar to Amazon warehouse robots. Working in teams of four has helped develop skills in communication and teamwork alongside mechatronics, programming and planning.



Students have been able to work with the robotics thanks to the generous support of EduFundUK, who provided a £1500 grant to purchase the robotics kit.

Flourotec industry visit - Shortly after half term, year 12 Design and Technology students will be paying a visit to Visit to Flourotec UK based in Welwyn as part of their curriculum enrichment. Flourotec is a company specialising in the manufacturing of precision machined components and industrial coatings from engineering plastics, particularly PTFE and PEEK.

The visit aims to bring engineering and design to life by helping students make connections between classroom theory and real-world practice. Seeing a workplace first-hand would provide valuable context for their studies and encourage them to consider how technical knowledge, creativity and problem-solving contribute to the work of a business.

During the visit, students will have opportunities to:

- Connect their learning to practical applications, particularly in areas such as design, materials, manufacturing and quality.
- Learn about the importance of teamwork, communication and safe working practices in a professional setting.
- Explore potential career pathways and find out about the skills and qualifications employers value.
- Ask questions about working in industry and routes into employment, apprenticeships or further study.
- Gather inspiration that could inform their coursework, project work and future ambitions.



Year 12 is an important time for students to begin making decisions about their next steps. A visit of this kind helps them develop a more informed understanding of the opportunities available and give greater purpose to the work they complete in school. It also encourages curiosity, independence and confidence when engaging with professionals outside the classroom.

Worshipful Company of Founders - The Warner lecture is a prestigious event held annually at the Worshipful Company of Founders Hall near the Barbican. Five students from the year 12 design and Technology class have been invited based on the merit of their summer bridging work. The students will get to meet prestigious members of the Founders and guests from technology and business backgrounds during an evening that includes a lecture by Michael Findlay, Chair of London Stock Exchange plc and Hays plc. His lecture, titled “How a Vibrant City of London Can Help the UK Achieve Strong Economic Growth,” will be delivered before a formal dinner followed by questions to the speaker. This is a great opportunity for the students to meet leaders of industry and a wide range of STEM fields and to make connections with potential sponsors.



TBC Engineering UK – The opportunity has arisen to be part of Engineering UK’s STEM careers working group. The group meets half termly and includes representatives from RAEng, ICE, IMECHE and IOP amongst others. The meetings cover all aspects of how industry can support schools and develop the STEM workforce of the future. As a previous member of the group, I have been invited back to join the group meetings and offer invaluable input from a school-based perspective.

Volunteers – I would also like to thank the sixth formers who have given up their time to support STEM clubs after school during this half term. Their help is highly valued and gives the younger students a lot of insight into the sixth form and their future career paths.