

Robots at CoundonCourt

One student tells of the rise of the robots in her school

Emily's story

"For many, when they enter Ms Doran's room, a glorious sight of pure chaos beholds them. Robots whiz across the classroom, smashing themselves into nearby tables with kids yelling in frustration, waving about iPads as they rush to reprogram the machines. In another corner a crowd of girls, supposedly the calm ones, are working on a five-minute STEM presentation, an innovative solution to solve a world problem, only to be broken up with much joking and laughter.

For Dalia, Ruby and me, this started when we were tiny Year 9s in 2018. Our friend Joe wanted to build a robot, and we had come along with him to the 'Coundon Court Robotics Club'. We had no idea what we were capable of or even what an engineering/Lego competition involved.

Tomorrow's Engineers and First Lego League competitions are similar in the fact that they both consist of a STEM project that has to be presented to judges. There is also a challenge mat where a Lego robot needs to be programmed to perform a series of tasks.

It turned out that Dalia was the brains, Ruby was overflowing with ideas, and I loved to talk to people. With little experience, a lot of encouragement from Ms Doran and much help from the sixth formers, we started a science project on a UV bacteria-busting robot. Surprisingly we won the local heats, carrying back two shiny trophies and qualifying us for the nationals at the NEC. Although we did not win there, we enjoyed meeting engineers, visiting the stalls in the Big Bang fair.



We had the surprise of appearing in the Tomorrow's Engineers 2019 recap video.

This competition was the stepping-stone to greater things for us. In Year 10 we recruited three new team members: Steph, Imaan and Archie, who were a great support as we headed to the more advanced IET First Lego League competition. That year, the challenge theme was City Shaper, based on building design. Coincidentally, our school was drafting plans for a new block, so we took the chance and asked for the architectural plans.

Although Ms Doran had helped get us organised in Year 9, the robotics competitions had given us the confidence to start showing more independence. Now, with guidance, we began working as specialists in each part of the competition, running our own sub-projects and planning the timeline so we could coordinate being ready for the FLL event. Joe and Dalia designed the robot and programmed it; Steph planned out what missions on the mat would be achievable; Archie analyzed building plans; Ruby and Imaan constructed scale models and analysed pupil-flow; and I did all the admin work: arranging meetings, sending emails, writing the script. We needed to include the wider school community in our project, so surveyed students and staff, and met with the head and architect. We even spoke to engineers to find out how we could best solve any problems we found. Our solution to congestion in the corridors was to redesign the building's shape to make it more efficient. We even invented a twisting roof in the form of a hyperboloid, to create a covered play area.



Meeting the head teacher and architect.



Emily, Imaan, Dalia, Ruby, Stephanie, Joe, Archie.



As the date of the competition drew closer, we began to stay longer after school, and the girls even arranged Teams meetings (long before its lockdown fame) to edit and improve the script. The competition was an intense day, and despite a very successful robot game winning 245 points and offering chocolate digestives to sweeten up the judges, no one expected to win...

...except we did, and we got through to the national final in Bristol.

On the day of the nationals our robot destroyed itself in the middle of the robot game. The judges watched as we worked as a team to resurrect the robot in record speed and return to the table. As a result, they awarded us the RS Future Engineers Award: this got us through to the Globals... Then lockdown...



Covid-19 and the sheer uncertainty of events made us wonder if we were able to continue. Although we were in lockdown, we did not waste any time preparing for the 2021 season. Ms Doran arranged for us to have Teams meetings with engineers and specialists; boxes of Lego were sent to our houses. Once our exams were finally over in May, we threw ourselves into preparing for the competition. The 2021 season theme was Exercise. We decided on a fitness app called 'Astrofit'. We researched the biological responses to exercise and programmed the front end of the App while getting the robot ready for the challenge mat. Once able to meet face to face we only had two to three weeks to get everything ready and were incredibly surprised that we had done enough to win our regional competition again!

I am now on an Engineering Apprenticeship and loving the experience. My involvement with Lego robotics definitely contributed to where I am now."



Welcome to Design and Technology at COUNDON COURT



At Coundon Court we have a program of robotics that usually starts in Year 7 with VEX IQ robots. Most students get the opportunity to join the 'Robot Wars' club for six weeks, or they meet the robots at our STEM day. In Year 8 they can choose to progress to the EEP Tomorrow's Engineers competition. By Year 10 they have the skills needed to try IET's First Lego League. In Year 12 they often come back to mentor the younger students. This builds on skills as they move through the school and feeds a love of STEM careers.



Ms. Doran with year 7 'Robot Wars' club who use VEX IQ robots.

Year 7 with VEX IQ robots.



