

Vex Robotics: From Blueprint to Battle

Written by Alex

Since September, students of all years have been working endlessly to construct a robot to compete in the Vex Robotics competition this year. After months of anticipation, it took place on the 25th January, where 21 robots from schools across Bedfordshire, Hertfordshire and Buckinghamshire joined us in the Sports Barn for a day of competing. So was it glory for Goldington? Did we qualify for the nationals? Read on to discover more...



Goldington Academy submitted six teams into the competition, all of which were given the challenge to design and assemble a robot with the ability to score points in an arena by flipping caps, hitting flags, parking on a platform and placing caps on poles. The teams were given kit to construct the robot, and had to code the robot themselves. Emily from the team 'Girlbots' told us about the design process: "We drew sketches which we annotated. We then turned them into a more detailed plan which we built from."

Once their robots were fully assembled, the teams were given their first taste of what competing would be like – the scrimmage. It was a friendly competition where the teams due to take part in the real competition could practice scoring points and meet other teams. "The scrimmage was fun," said Lola, from the team 'Screw Loose', "and was very helpful for our team in particular as we hadn't had any experience with the competition before." After the scrimmage, the teams were given a couple of months to further work on their robots and make any changes before the competition to ensure their robot would perform successfully on the day, such as fixing, strengthening and adjusting their robots to ensure they could withstand the intense battles throughout the day. Some teams wrote a log book: an in-depth account of the entire robot construction and design process, whilst some developed their autonomous code: coding that worked automatically and gained the teams more points. With their robots finalised and ready for battle, it was time to compete!

The day of the competition began with some last-minute adjustments to the robots before competing. "On the day, we realised that the robot was slightly too large and we had to adjust

it to fit the size requirements,” said Lola, from the team ‘Screw Loose’, “which was stressful, but we managed to do it in time and it functioned perfectly.” After the robots had undergone inspection, the practise matches took place, allowing each team to familiarise themselves with the arena once more. Excitement and anticipation lingered in the atmosphere as the months of preparation all led up to this moment.



The Year 9 team ‘Screw Loose’ with their robot

The robots then battled it out on the arena for hours; flipping caps, hitting flags, and parking on platforms all to score points and push their place up the leaderboard. Each team played in just four, intense games, some lost and some triumphed. Adam, from the team ‘Not So Clueless Crew’ told us: “I found everything about the competition exciting and enjoyable – especially getting the opportunity to compete against other schools!”

The games were over and it was time for the alliances.

Representatives from each team lined up in the order of the leaderboard, and in descending order, each picked another team to form an alliance with. Although no Goldington teams were in the top 5, there was still all to play for as this could quickly shift during the alliance round. Some teams kept it in the family, with ‘Screw Loose’ and ‘Girlbots’ pairing up, whilst some chose a team outside school, such as ‘Not So Clueless Crew’ joining with ‘Wix Sims’.

After some heated games in the arena, the semi-finals took place, and following this, the final! This took place between four teams of including placements ‘Lamarz’ 13th place, ‘Jaguars’ in Crew’ in Not’ in 20th place.

Goldington

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Ranking					
Rank	Team	Name	W-L-T	WPs / APs / SPs	
1	6023R	StoweBots - Lion	4-0-0	8 / 16 / 38	
2	3116D	Team Control Freaks	4-0-0	8 / 16 / 35	
3	1408F	Floppy	4-0-0	8 / 16 / 33	
4	6023S	StoweBots - Shield	3-1-0	6 / 12 / 34	
5	20174B	Team BC	3-1-0	6 / 8 / 28	
6	1322E	Lamarz	3-1-0	6 / 4 / 37	
7	1408S	Stag	2-2-0	4 / 8 / 40	
8	20174D	BC Boys	2-2-0	4 / 8 / 40	
9	1408V	Henry VIII	2-2-0	4 / 8 / 39	
10	5638A	TDMS Robotics Tolerance	2-2-0	4 / 8 / 25	
11	1408G	Grabber	2-2-0	4 / 4 / 39	
12	3116A	Team Control Freaks	2-2-0	4 / 4 / 38	
13	1322D	Screw Loose	2-2-0	4 / 4 / 35	
14	1322G	Girlbots	1-3-0	2 / 8 / 47	
15	26579B	Redborne Robotics 02	1-3-0	2 / 8 / 41	
16	1322B	Jaguars	1-3-0	2 / 4 / 33	
17	1322C	Not So Clueless Crew	1-3-0	2 / 4 / 29	
18	20174C	Wix Sims	1-3-0	2 / 4 / 28	
19	26579A	Redborne Robotics 01	1-3-0	2 / 0 / 51	
20	1322A	Because Why Not	1-3-0	2 / 0 / 26	
21	20174A	Biddenham	0-4-0	0 / 4 / 44	

After some heated games in the arena, the semi-finals took place, and following this, the final! This took place between four schools unfortunately not Goldington. The final of the Goldington teams were: in 6th place, ‘Screw Loose’ in ‘Girlbots’ in 14th place, 16th place, ‘Not So Clueless Crew’ in 17th place, and ‘Because Why Not’ in 20th place.

Although wasn’t in first place, the competition was not over, and an opportunity to qualify for nationals. The winning team ‘Stowebots – Lion’, a team Buckingham, and the winning Bedfordshire team was a team Bedford College. After the placements were confirmed,

the award ceremony took place, where the winners were announced, congratulated, and the awards were presented. This was Goldington's ticket to be in with the chance of qualifying for the nationals, and the turnout was... Goldington's 'Girlbots' took the Judges Award! They demonstrated an excellent design diary, as well as exemplary teamwork and commitment which won them the award. Consequently, they qualified for the nationals, along with two other Buckingham teams.



The 'Girlbots' with their Judge's Award

I spoke to Isobel and Emily from the team to discuss what exactly happened at the event.

Emily and Isobel felt amazing going to the nationals. They had been working as a team for four years and their time finally came! When they found out the news, they were exhilarated and speechless. "It was a great learning experience," said Emily, "and really exciting."

"We continued to build our robot on the minibus journey to the nationals, but once we had finished it and got there, we realised we wouldn't be able to get it to work," said Isobel.

"We attempted to create a ball thrower," said Emily, "however it failed at the competition so we had to make a quick change back to a claw."

"One hour before our practise match, we took the robot apart and changed the design completely – we went back to our original idea of the clawbot," said Isobel, "but instead of having wheels, we had treads (we were the only team to have them). The robot was a work in progress on the first day. Bits flew off and the robot broke down a few times but these things weren't hard to rectify. By the second day we had a fully built and working robot. We even managed to have an autonomous program, which scored us points."

At one point in the competition, the girls were in 1st place, and although that wasn't the final turnout, they did extremely well and to get to the nationals is an incredible achievement in itself. They thoroughly deserved this opportunity for their teamwork and admirable dedication to robotics.



The 'Girlbots' at the nationals

Overall, the entire Vex Robotics experience for our school – from the scrimmage to the nationals – was incredibly beneficial to students of all ages who are interested in STEM, as it has profoundly inspired them to take their robotics interest further and into a future career. A

special thank you to Oscar from Vex Robotics who ran the event and to Mrs Spencer for allowing our school to get involved. It was an incredible experience.