

MAKERSPACE CLUB

by Sathbh Brosnan

It has been a very busy and productive year for our 30 Makerspace club members. The club meets every Friday after school and on some occasions we even meet twice a week.

The Makerspace Club is a place for hands-on learning. It promotes innovation through practical experimentation and it fosters a maker mindset in students. This club encompasses all aspects of STEAM education and has enabled students to make a number of different projects, both digital and physical. The Makerspace Club incorporates learning in a number of different areas including coding, robotics, science, engineering, designing, 3D printing and inventing.

SOME OF THE PROJECTS THAT HAVE BEEN COMPLETED SO FAR THIS YEAR INCLUDE:

Astro-pi Mission zero - The European Astro Pi Challenge is an ESA Education project run in collaboration with the Raspberry Pi Foundation. It offers students the amazing opportunity to conduct scientific investigations in space by writing computer programs that run on Raspberry Pi computers on board the International Space Station (ISS). Twenty Makerspace students took part in this year's challenge and will have their code running on board the ISS this summer.



The design and construction of students' Jack-o'-lantern boxes -

To celebrate Halloween, students learned some woodworking skills and created their own Jack-o'-lantern boxes. As part of the project, students had to code a micro:bit which worked as a "candle" inside the lantern.

Hydraulic labyrinth - Students designed their own individual labyrinths and then used cardboard to create them. Students then used syringes and pipes to create a hydraulic system that moved a ball around the labyrinth.

Laser-cut Christmas ornaments - Students used CAD to design Christmas ornaments and then used the school laser cutter to bring their creations to life.

3D printing - Students have been using CAD to create their own objects to be 3D printed.

LEGO League - For the first time ever, 7 of our Makerspace students took part in the International First LEGO League Robotics challenge. As part of the challenge, students engaged in research, problem-solving, coding, and engineering - building and programming a LEGO robot that navigates the missions of a robot game.

Microbit Coding and Electronics - Students used microbits to create their own "buzz the wire" games. This involved coding programs, transferring them to microbits and creating circuits to complete the game.

Game Design & Development - Students used software such as Scratch and Makecode Arcade to design and develop their own computer games. Some students even worked on developing python programs.



We would like to congratulate 2nd year Makerspace and Junior Cycle Coding student, Samuel Garvey. Samuel worked tirelessly throughout the year to code and develop his own game on Scratch called "Grim Hallows". His talent and hard work earned him a spot at the National Scratch Competition Finals in the 1st-3rd year category which were held in May at the University of Limerick.

His game greatly impressed his peers and the judges. Well done Samuel.



Mounthawk Masterminds

- Lego Robotics Team

We are incredibly proud to share the achievements of our exceptional FIRST LEGO League (FLL) Robotics team, the Mounthawk Masterminds.

Comprising seven talented students from 1st to 3rd years, these young innovators have devoted countless hours to their training sessions after school, resulting in a truly remarkable year. This is the schools' first year being involved in the FLL competition and it certainly was a successful one. The competition comprises four areas: Innovation Project, Robot Design, Robot Performance and Core Values. This year's theme was "Superpowered", so the team's Innovation Project looked at the overdependence on non-renewable energy within our community.

The team was formed in late December and they have been hard at work ever since. In February, the Mounthawk Masterminds showcased their skills at the regional competition in Galway, where they left a memorable impression. The team's performance earned them the prestigious Robot Performance Award, achieving the highest score across 11 regional events in Ireland and Northern Ireland. Their remarkable efforts also led them to secure the Overall Champions Award, recognising their excellence in all aspects of the competition.

Fueled by their success at the regional competition, the Mounthawk Masterminds embarked on an exciting journey to the All-Ireland Finals. Competing against the finest teams in the country, they once again shone brightly. Their exceptional robot design garnered them the Robot Design Award, showcasing their ingenuity and technical expertise. Additionally, they triumphed in the intense Robot Knockout Challenge.

As a testament to their achievements at the All-Ireland finals, the Mounthawk Masterminds received a coveted invitation to compete at the Western Edge Open Competition in California. In May, after weeks of fundraising, they travelled across the Atlantic, eager to pit their skills against 22 international teams and 53 teams from across the United States. Their participation in this prestigious event is a testament to their dedication and talent.

The competition in California was a thrilling experience for the Mounthawk Masterminds. Surrounded by a global gathering of bright young minds, they showcased their extraordinary abilities and represented both our school and Ireland with distinction. Their innovative solutions, teamwork, and unwavering determination left a lasting impression on judges and fellow competitors alike, forging unforgettable memories and establishing lasting connections.



Our trip to California would not have been possible without the generous financial support of parents, family members all over the world, and our sponsors. As well as financial support, we have gained valuable insight into the world of robotics from local company, REAMDA, and we will no doubt continue to learn from them as we pursue our robotics journey. Thank you to team Coaches: Ms. Sadhbh Brosnan & Mr. William Nolan without whom none of this would have been possible.

