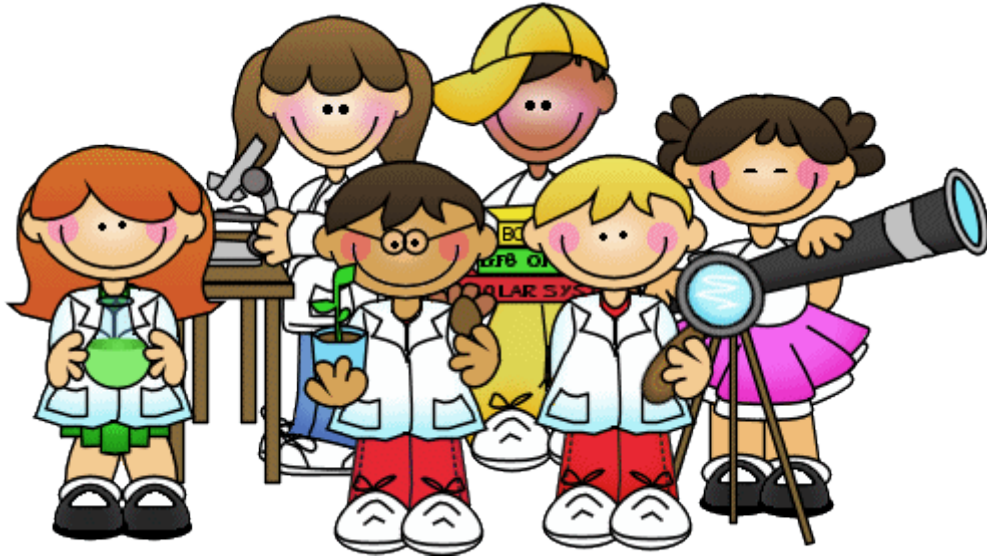


Discovery Log



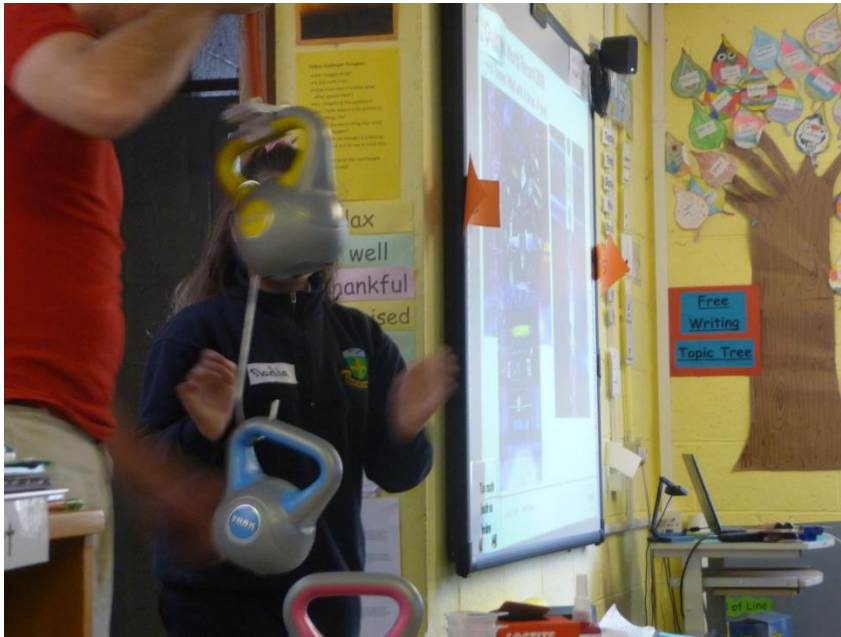
Kilcoole Primary School

AoSME WW004

Step 3: Engineering

- Guest speaker P. O'Sullivan (talk and presentation which included some interesting investigations including into the strength of glue using kettlebells).
- Lego Robotics Club

Engineering talk



On Wednesday the 25th January, 5th and 6th classes had a visit from Peter O'Sullivan, an engineer from AO Packaging Engineering. We learned that there are various types of engineers including civil,

chemical, robotics, environmental, structural and many more. Peter explained that an engineer must be a problem solver, creative thinker, good at Maths and Science and have a desire to change the world.

Peter showed us some of the many engineering processes involved in the manufacturing of Lego. He also showed us some cool experiments his company use including measuring the strength of glue and changing water instantly into a solid (used in nappies)

We really enjoyed the chat with Peter. He definitely has inspired the next generation of potential engineers in Kilcoole.

Lego Robotics Club

Congratulations to the Lego Robotics Club who won the Programming Award at the All Ireland Lego League in Galway in February. The team came 5th out of 27 teams in the main competition. Thanks to Kayla and James Scott for mentoring all in the club.

This year's theme was hydrodynamics.

Kilcoole Primary School has again been invited to compete at the First Lego League national championships in Galway in February 2018. We are sending a team of eight 5th and 6th class students who have been working hard since September to design a robot for the competition. Students who earned their place on the program this year are: Seamus

Darcy, Reece Finnerty, Cayden Elliott, Madeleine Scott, Sophia Wang Arngrimsson, Jake Burns, Andrew Curley, and Jamie Conaty.

First Lego League teams build a robot made of Lego to compete with 30 other schools and clubs from around Ireland. The robot must perform a number of missions in a 2.5 minute time limit, earning points for each mission completed successfully. For example, the robot might deliver something to a target area of the competition board, or manipulate a machine to retrieve an object. This year's theme is Hydrodynamics, so our missions all have something to do with the human water cycle. In one mission, our robot flushes a Lego toilet, which then activates a model of a sewer network to eject Lego water and sludge. The robot must perform each task autonomously, which means that the robot does everything by itself, based on the programs we write and install on the robot's on-board computer.

Robots are programmed using a visual programming language called Labview. Sensors are used during the missions, such as colour sensors to detect and follow black lines on the mission board. The robot is also equipped with a gyroscopic sensor to help identify its position during each mission. Our program reads the sensors using program loops and then reacts when the sensors reach a certain value. The robot uses

motors, gears and attachments built by us to manipulate objects on the competition board.

In addition to the robot game, the competition has three other judged sections. The first judging session, 'Core Values', determines how the team works together and uses First Lego League Core Values in everything we do. Values we learn about include Inspiration, Teamwork, and Gracious Professionalism. In the Robot Design, or technical judging, we demonstrate the mechanical design, programming, and strategy of our robot.

Finally, in the Project, we give a 5-minute presentation on our project to solve a human water cycle problem. For this section, our team invented a shower timer to help people save money and water by taking shorter showers. We are building a prototype of the timer using Lego electronics, and are working on a business plan to make sure our timer can be successfully sold and used. Our timer is unique because it uses a sound sensor to detect when the shower is turned on.

Lego robotics is challenging because we only have a few months to get ready for the competition. Even though it can be stressful, we're learning a lot about engineering and programming, plus it's fun to see what our robot can do. We are looking forward to spending the day in Galway and show the other teams our robot and project solution.

