



Olga



Madhumidha



Connor



Canice



Aruna



Anthony

March 2020

The Environment Zone was a themed zone for primary schools, supported by SFI. There were six engineers taking part in the zone:

- Olga Ormond is working on projects in the digitalisation of industry, which will lead to more environmentally friendly and efficient factories and farms
- Madhumidha Murugan is a PhD student at the Centre for Advanced Photonics and Process Analysis, working on creating a portable environmental sensor
- Connor McGookin, the winner of the Environment Zone, is studying how changes to our energy system will reduce the amount of CO₂ emissions
- Canice Coogan is a civil engineering project manager at Focus Plus Ltd
- Aruna Chandrasekar is a PhD student investigating how to make our energy sources and uses cleaner and greener
- Anthony Newell helps people use 3D-printing to lower our environmental impact

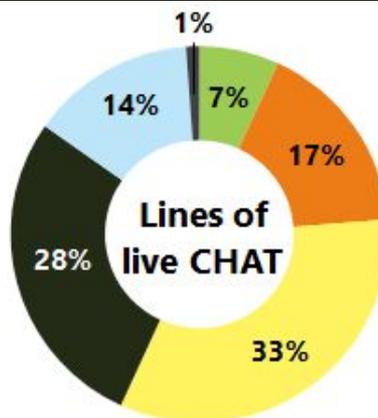
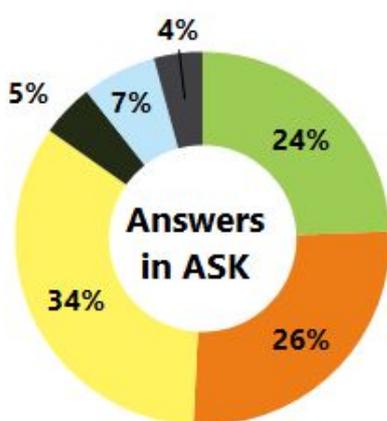
Key figures

This zone had a higher number of students logged in, and a higher percentage of these students were active compared to other zones in March 2020. This zone also had more questions asked and approved than the average of the other zones in March 2020.

In response to coronavirus, Ireland announced on the final Thursday of the event that all schools would close from that evening. We decided to finish the event and announce the winners a day early. We ran chats that were booked on the final day if teachers requested, so that students could log in from home, as well as the open live chats, however fewer students were able to join than had previously.

	ENVIRONMENT ZONE	MAR'20 ZONES AVERAGE	2012-19 ZONES AVERAGE
Schools	9	9	10
Students logged in	289	279	292
% of students active in ASK, CHAT, VOTE, or comments	84%	80%	83%
Questions asked	528	478	460
Questions approved	250	215	221
Answers given	500	395	420
Comments	85	58	45
Votes	139	146	211
Live chats	15	13	14
Lines of live chat	3447	3283	3,576
Average lines per chat	230	244	248

Engineer activity

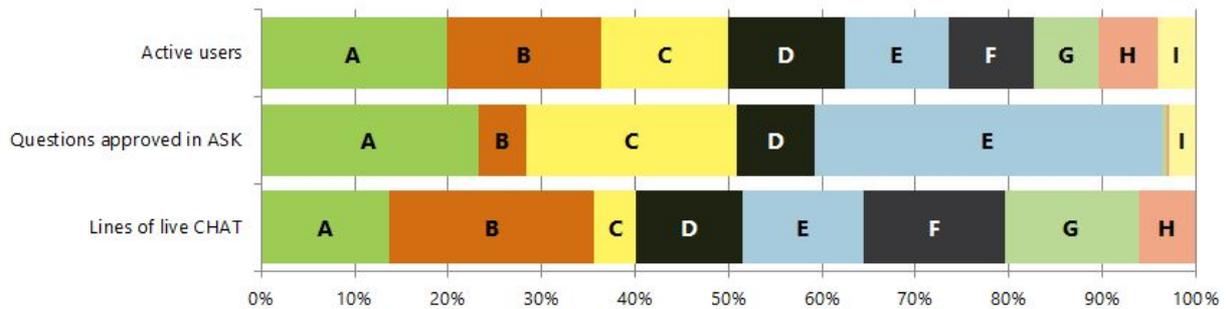


PLACE

- Connor McGookin
- Anthony Newell
- Aruna Chandrasekar
- Madhumidha Murugan
- Olga Ormond
- Canice Coogan

- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th

School activity



	YEAR GROUP(S)	CLASSES
A Shandrum National School, Co Cork	4th Class, 5th Class, 6th Class	2
B Gaelscoil na Cruaiche, Mayo	3rd Class, 4th Class, 5th Class, 6th Class	4
C Scoil Na Maighdine Mhuire, Westmeath	5th Class	1
D St Annin's NS, Galway	4th Class, 6th Class	2
E JOHN PAUL II N S, Dublin (U)	5th Class	1
F St Margarets NS, Dublin (U)	3rd Class, 4th Class, 5th Class, 6th Class	2
G St Molaga Senior Ns, Dublin	6th Class	1
H Knockraha National School, Cork	4th Class, 5th Class, 6th Class	2
I Patrickswell National School, Limerick	3rd Class, 4th Class	1

We try to reach schools that are less likely to receive visits and benefit from other engagement activities. Find out what we mean by under-served SFI target schools (U) and Delivering Equality of Opportunity in Schools (DEIS), and how you can support us in working with these at about.imascientist.ie/2016/widening-participation

Popular topics

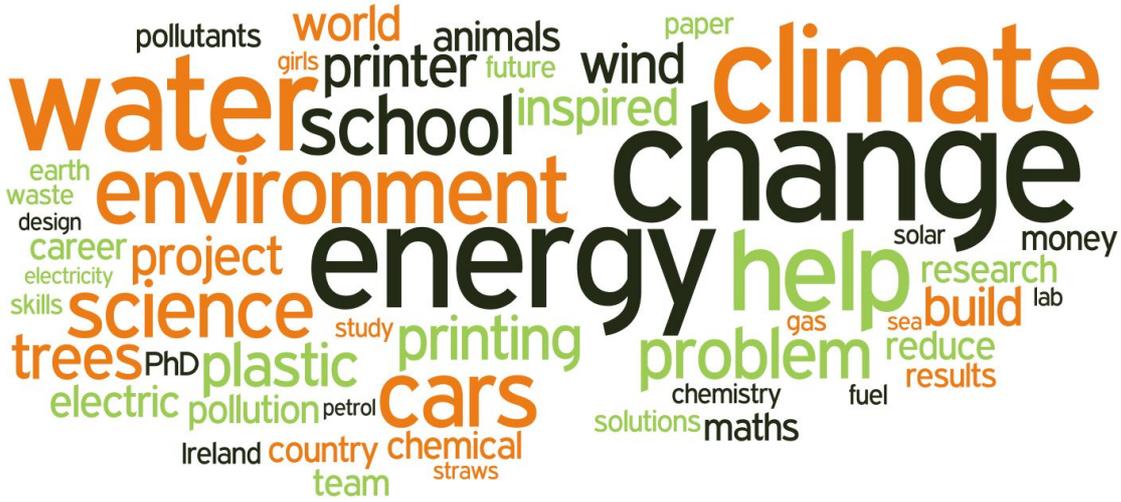
Discussions in the Environment Zone were very on topic, asking the engineers lots of questions about climate change, renewable energy and electric cars.

Aruna was asked about how her research would allow her to make energy sources greener and cleaner, and Anthony was asked questions about 3D-printing and the environment, and whether it would be possible to print things such as chairs and cars.

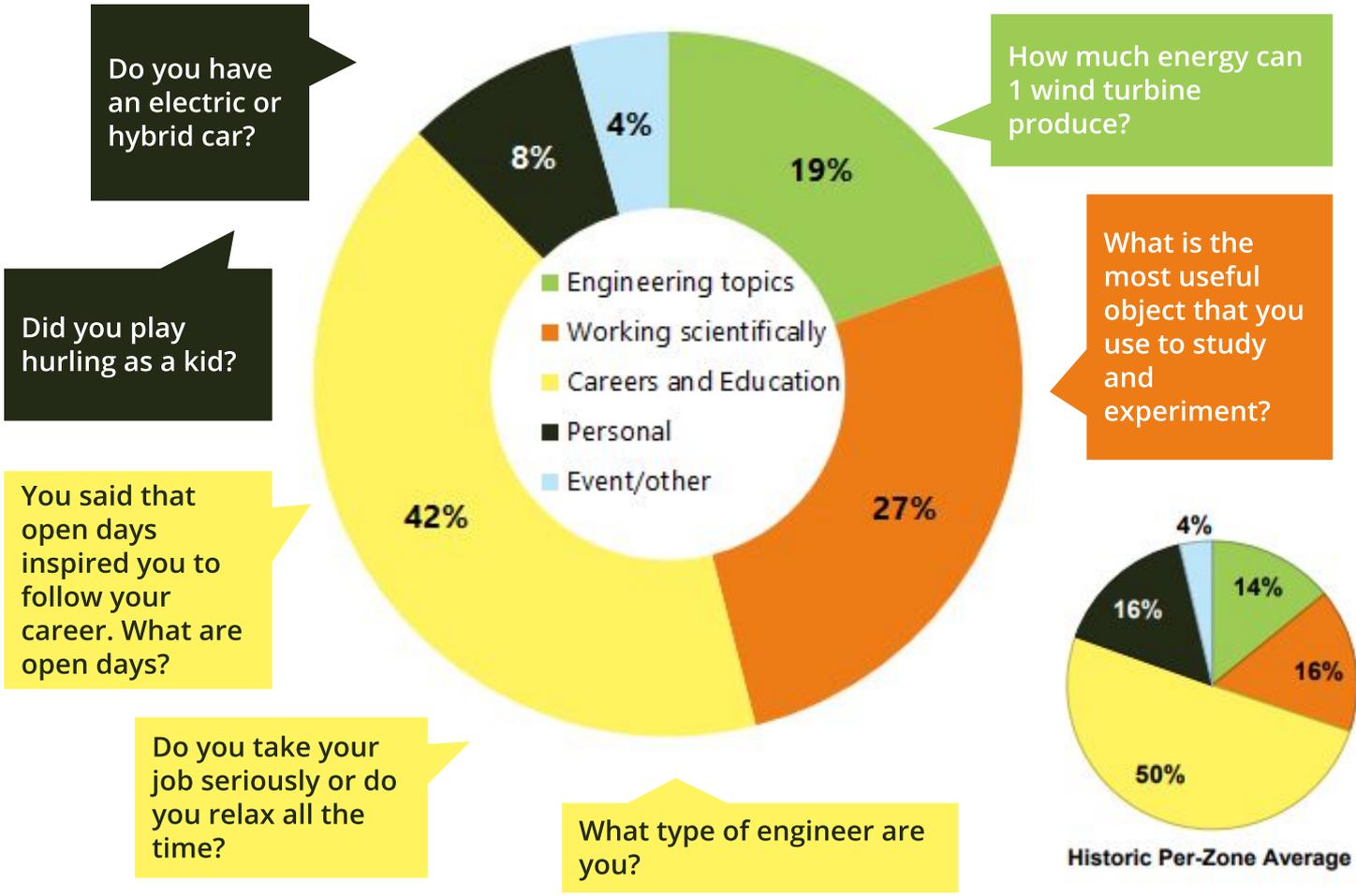
Students also asked general questions about the environment, such as how much energy renewable sources can produce, and about solar panels and hydropower, and what were the main ways that people could save the environment.

Students asked the scientists questions about their personal lives, including their favorite sport, their opinions about aliens, and whether they owned any pets.

Frequent words used in live chats by students and scientists



Question themes and example questions in the Zone



Examples of good engagement

The students were asking lots of questions based around climate change and renewable energy sources and what they could do on a personal level, relating science to their own lives which helps contribute to their Science Capital:

*"On a limited budget, what tips do you have for improving your house so you don't waste energy" - **Student***

*"Insulating your house is the best way to reduce energy needs, as heating is the biggest energy consumer in the residential building (about 72% of the total building energy consumption)" - **Aruna, Engineer***

*"On a limited budget first look at insulation, look at the temperature setting of your heating and hot water, turn off all devices not in use" - **Olga - Engineer***

*"It may require a little extra capital, but the energy savings is humongous - **Aruna, Engineer***

*"Thanks!" - **Student***

*"Space heating uses more energy than water heating so insulation is the best start, especially in the attic. Double glazed windows are essential too. Then ensuring your boiler is serviced often will improve its efficiency too." - **Anthony, Engineer***

*"Thanks Anthony" - **Student***

*"You're welcome!" - **Anthony, Engineer***

*"Aruna, what is your favourite green energy source" - **Student***

*"My favourite is solar energy, as it is possible to install it in every house. Hopefully it will be cheaper in the coming years as well - **Aruna, Engineer***

*"Aruna my favourite is hydro powered energy. My dad is hoping to get solar panels in our house!" - **Student***

*"Hydro power is pretty nice, though it requires the right landscape a lot of times" - **Aruna, Engineer***

There was many discussions about Connor's work on 3D printing and its applications, increasing the students understanding and relating engineering to their own interests:

*"How does 3D printing work?" - **Student 1***

*"We first get a 3D drawing which we can make on a coputer and then we use another app to slice the drawing into layers from bottom to top so the 3D printer can read it, then when we give instructures to the printer it will deposit material in these layers until our part is made" - **Anthony, Engineer***

*"Wow that's really interesting!" - **Student 1***

*"Is it possible to 3D print a car? - **Student 2***

*"We can definitely print parts for a car and metal and plastic parts and spare parts are currently being printed for cars" - **Anthony, Engineer***



Engineer winner: Connor McGookin

Connor's plans for the prize money: *"I'd like to run a schools initiative (climate hack) with the money, asking students to develop creative responses to climate change."*

Read Connor's **thank you message**

Student winner: swim021ham

As the student winner, swim021ham will receive a certificate and a gift voucher.

Feedback

We're still collecting feedback from teachers, students and engineers but here are a few of the comments made about March's *I'm an Engineer*...



It's been a lot of fun interacting with everyone over the last few weeks and we've had loads of interesting conversations and questions. I'd like to thank all the students who took part, and their teachers for signing up their classes to this incredible initiative.
— Engineer

This has been brilliant, so interesting. Thank you all for your wonderful input and your engagement with all the questions and for making it such fun.
— Teacher

thanks you we had a great time chatting with you, I have learnt alot, thanks!
— Student

The girls absolutely loved the live chat! They got such a buzz out of it, so much excitement in the room!
— Teacher

This has been so much fun!!!!
— Student