

November 2019

The Detection zone was a themed supported by STFC. There were five engineers taking part in the zone:

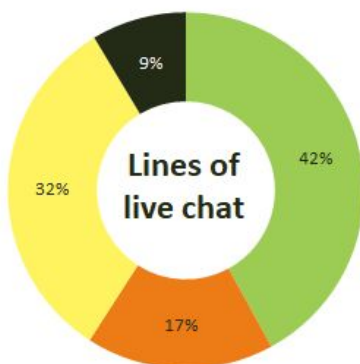
- Will Smith works at Daresbury Laboratory collecting data from the particle accelerator
- Lulu Buford works for Wood plc, an engineering partner for STFC, designing gas pipelines for a laboratory that detects dangerous elements in samples
- Fahim Dhalla works at CERN as a cryogenics mechanical engineer, testing superconducting magnets
- Chris Parmenter, the winner of this zone, works at STFC RAL Space designing cameras and other equipment to use in space
- Candice Basson is a PhD student funded by STFC using the Large Hadron Collider to look for the building blocks of our universe

Key figures

There is usually space for six engineers in a zone. In this case, five engineers took part in the zone due to an engineer dropping out. We continue to find it more difficult to recruit engineers than scientists in the activities.

	DETECTION ZONE	2012-19 ZONES AVERAGE
Schools	11	11
Students logged in	338	399
% of students active in ASK, CHAT, VOTE, or comments	93%	86%
Questions asked	676	584
Questions approved	215	224
Answers given	201	441
Comments	35	42
Votes	248	299
Live chats	16	17
Lines of live chat	3192	5540
Average lines per chat	200	317

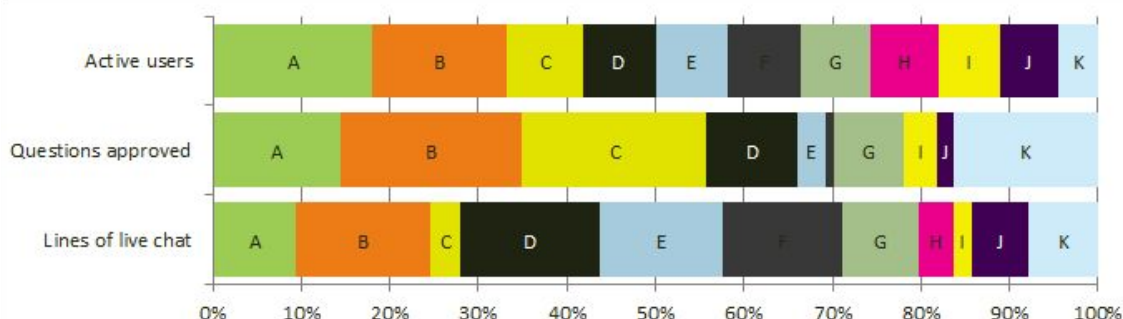
Engineer activity



ENGINEER PLACE

Chris Parmenter	1st
Fahim Dhalla	2nd
Candice Basson	3rd
Lulu Buford	4th
Will Smith	5th

School activity



	YEAR GROUP(S)	CLASSES
A Weston College, Weston-super-Mare (U)	12, 13	2
B Arbroath High School, Angus (U)	8, 9	2
C Rainham School for Girls, Gillingham (U)	7, 8	1
D The North School, Ashford (U)	10	1
E Wymondham High Academy, Wymondham	11	1
F The Sir Robert Woodard Academy, Sompting	9	1
G Walker Riverside Academy, Newcastle-upon-Tyne (WP)	9, 10	2
H Abbey College Cambridge, Cambridge	STEM Club	1
I St Peter's CE Primary School, Hindley, Wigan	5, 6	2
J New Line Learning Academy, Maidstone (WP/U)	9	1
K Beech Lodge School, Maidenhead (SEN School)	8,9	2

We have found that schools that are more than 30 minutes travel time from their closest Higher Education Institution are less likely to receive visits and benefit from engagement activities. We give priority to underserved (U) and widening participation (WP) schools when allocating places. Find out more about our research at <https://about.imascientist.org.uk/2017/school-engagement-in-stem-enrichment-effect-of-school-location/>

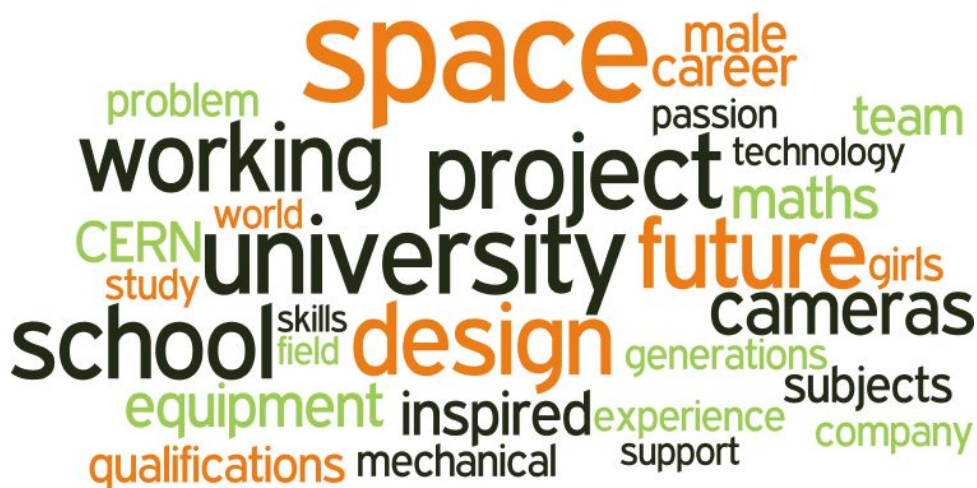
Popular topics

Students in this zone were particularly interested in what it is like to work as an engineer, with nearly half of all questions asked about careers and education. They asked all of the engineers how they got into their jobs and what they like about them, as well as for more general advice on choosing a career, the difference between university and apprenticeships and more specifically about the different areas of engineering to go into.

Many students asked about Chris' work in relation to space and what it's like to work in the space industry, as well as about the cameras he makes, how they get into space, how they work in space and how he builds them.

A third of the questions in ASK were getting to know the engineers on a personal level. Students wanted to know about the engineers' likes and dislikes, and finding things in common through sports teams and hobbies.

Frequent words used in live chats by students and scientists



Question analysis



If you had to choose one invention to take with you on a desert island, what would you choose?

What are some of the things a particle accelerator could be used for?

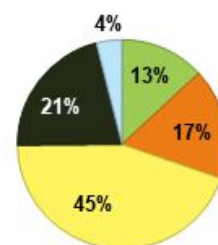
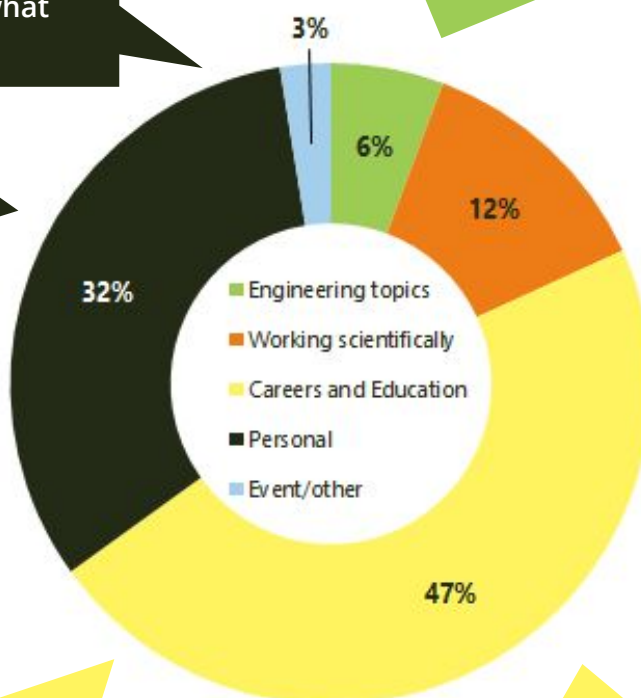
Do you have pets and what are their names?

How do you know what materials to use?

Any advice for someone having second thoughts on becoming an engineer?

Out of apprenticeships and university, which route is the best to get into the industry?

What qualities do you feel help to make you a successful engineer?



Historic Per-Zone Average
(Themed Zones)



Will



Lulu



Fahim



Chris



Candice

Examples of good engagement

In both ASK and the live CHATs there were lots of careers based questions, with students asking for help with specific areas and telling engineers what they enjoy most in school. The engineers were great at giving practical advice relevant to the students and responding in detail, helping to contribute to the students' Science Capital:

*"How likely is it for me to be a successful engineer if I struggle with engineering theory but excel in the practical side of things?" – **Student***

*"Very likely. More and more universities are teaming up with industries who really value practical work and real life experience. Theories are important but there's different roles so you can find your niche!" – **Lulu, Engineer***

*"Have you looked at being a technician? Technicians basically take the engineers ideas and make them work and keep it working. The LHC when it's on is run by a technician who makes sure our beams are stable. I don't envy that responsibility!" **Candice, Engineer***

*"Yes I have, it's what I wish to become after college but I was torn between maintenance engineer or technician, I have heard to be a maintenance engineer you need a good understanding of calculus, something I'm struggling to get the hang of." – **Student***

*"There's areas of physics I'm absolutely terrible at but powered through for exams. Maybe see if you can find work experience or people in the area you'd like to work in and discuss it. Sometimes you can get around your weak points." – **Candice, Engineer***

*"Thank you I will try that :)" – **Student***

*"It may also be you just need extra time or someone who can explain calculus to you in a different way. I hated it at college but quite enjoyed it at university weirdly." – **Candice, Engineer***



Will



Lulu



Fahim



Chris



Candice



Engineer winner: **Chris Parmenter**

Chris' plans for the prize money: "I'd organise a visit to the Rutherford Appleton Laboratory for students from low socio-economic backgrounds. I'd like to give them an opportunity to visit a unique, interesting place they wouldn't normally have easy access to."

Read Chris' [thank you message](#)

Student winner: **Callum MCR17**

As the student winner, Callum MCR17 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 November's *I'm an Engineer*...

I have really enjoyed talking to all the different students over the last couple of weeks :-)
I've enjoyed the enthusiasm of the students, with their range of questions and excitement
— Fahim, Engineer

The students will be choosing what to study after GCSE in the next year and I know most do not know what Engineering is. It was a good opportunity for them to find out more about Engineering - I will be spending time in future lessons discussing Engineering and other science careers. Thank you for organising a wonderful activity. It was well run and I was given extra support when I needed. Thank you again.
— Teacher

I got much more out the activity than I could have imagined. Some questions really challenged me, and made me think twice about what I do and why I do it.
— Chris, Engineer



Miss Clarkson
@MissAClarkson

S2 enjoyed the opportunity to live chat with real engineers today. They asked Chris and Candice some excellent questions! 👍 [#imanengineer](#) [@IAEGMOOH](#)



10:04 PM · Nov 21, 2019 · Twitter for iPhone