



Shruti



Mark



Faranak



Douglas



Charlene



Alistair

March, 2019

The Milligram Zone was a general engineering zone supported by the Science & Technology Facilities Council. There were six engineers taking part:

- The winner of the zone, Shruti Turner, a PhD student who researches the development of artificial legs for people who have lost theirs.
- Mark Bentley, who designs and makes bespoke and custom made “things” for scientific research and teaching practicals.
- Faranak Bahrami, who designs better ways to perforate thermoplastics without reducing their load-bearing capabilities at TWI Ltd who partner with STFC.
- Douglas Wragg, who is a road transport consultant engineer.
- Charlene Chung, a hydraulic modeller who works on designing sewers and drainage system at Aktins Global, who partner with STFC.
- Alistair McConnell, who designs and builds robotic sensor nodes for monitoring offshore structures.

The Milligram Zone was the busiest of the *I'm an Engineer* zones this March, with nearly 500 students logging in to put over 1,000 questions to the engineers in ASK.

Key figures from the Milligram Zone and the averages of the March zones

PAGE VIEWS	MILLIGRAM ZONE	MAR '19 ZONES AVERAGE
Total zone	27,021	17,686
ASK page	2,734	1,348
CHAT page	2,545	1,703
VOTE page	1,919	979

	MILLIGRAM ZONE	MAR '19 ZONES AVERAGE	IAE 2012-19 AVERAGE
Milligram Zone Schools	13	9	11
Students logged in	499	437	401
% of students active in ASK, CHAT or VOTE	94%	93%	86%
Questions asked	1,039	592	586
Questions approved	403	239	225
Answers given	834	516	442
Comments	51	31	42
Votes	440	354	299
Live chats	20	19	17
Lines of live chat	6,877	7,185	5,537
Average lines per live chat	344	379	317

Popular topics

Students were very interested in the engineers' jobs, especially where they were helping people. Shruti's work was popular, with students asking things like “How do you get the prosthetic limbs to move when the patient's brain tells them to?”

‘Robots’, how they are made, controlled and used, was a popular theme in students' questions.

Students also asked about the engineers' careers and education history, seeking their advice and wanting to know about their day-to-day job content.



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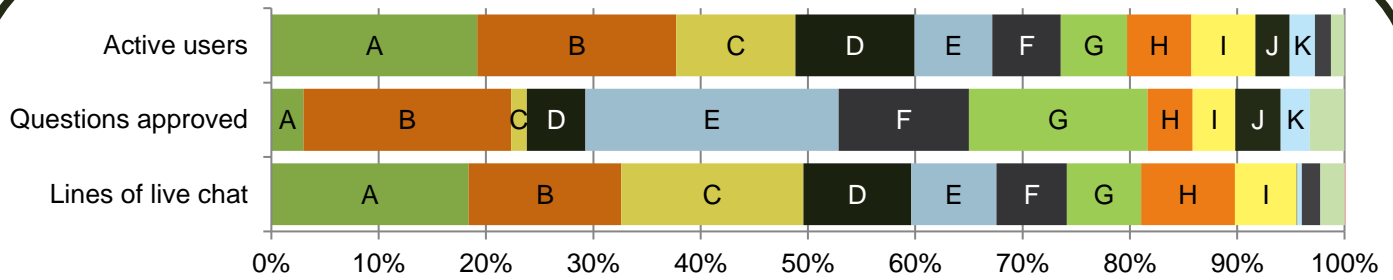


Charlene



Alistair

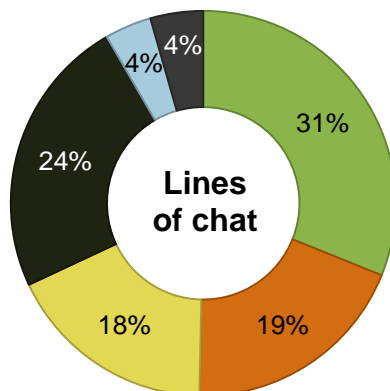
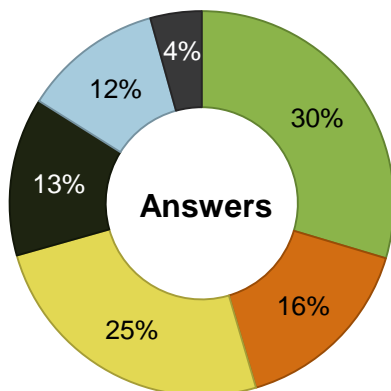
School data at a glance



School	Year/s	Classes	
A	Gable Hall School, Stanford-le-Hope, U	Y8	3
B	Bridgewater Primary School, Northampton, U	Y4	3
C	Robert May's School, Hook, U	Y9	5
D	Summerhill School, Kingswinford, U	Y8, Y9	2
E	St Edward's Church of England Academy, Leek, U	Mixed STEM Club	1
F	High Storrs School, Sheffield	Y10	1
G	Arbroath High School, Angus, U	S2	2
H	Harris Academy Wimbledon, London	Y7	1
I	Merton Park Primary School, London	Y4	1
J	Hylands School, Chelmsford, WP/U	Mixed STEM Club	1
K	Weston College, Weston-Super-Mare, U	Y13	1
L	Strathearn School, Belfast	Y11, Y13	2
M	Ursuline High School Wimbledon, London	Y9	1

We want to increase the participation of under-represented groups going into STEM careers. Find out what we mean by our under-served (U) and DEIS schools, and how you can support us in working with more of these at about.imascientist.org.uk/under-served-and-wp/

Engineer activity



ENGINEER	PROFILE VIEWS	POSITION
Shruti Turner	1,286	Winner
Mark Bentley	1,072	2nd
Faranak Bahrami	1,071	3rd
Alistair McConnell	758	4th
Charlene Chung	717	5th
Douglas Wragg	782	6th



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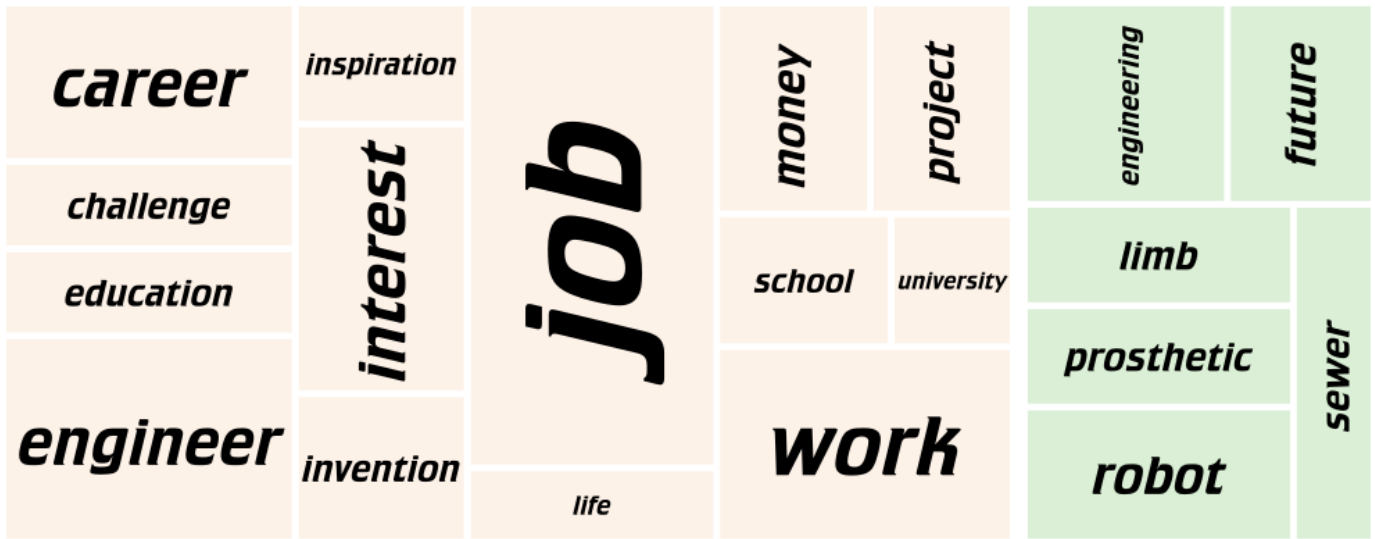


Alistair



Top Keywords of questions approved in the Zone

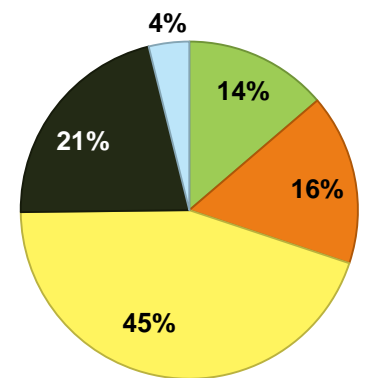
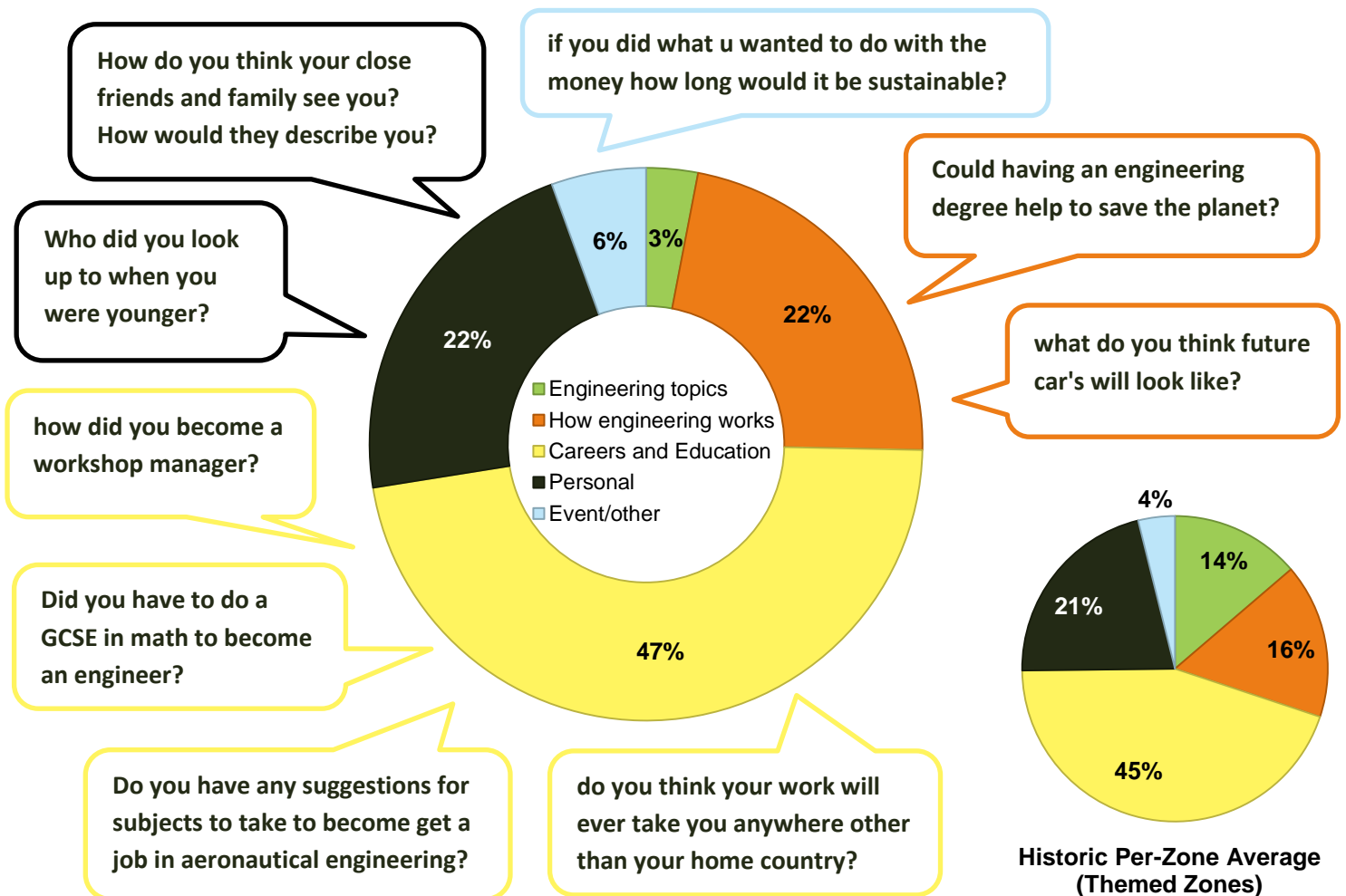
Area represents frequency of use



Being an Engineer Engineering

Question themes and example questions in the Zone

Find out about how we've coded the questions at about.imascientist.org.uk/what-do-students-ask-about/



Historic Per-Zone Average (Themed Zones)



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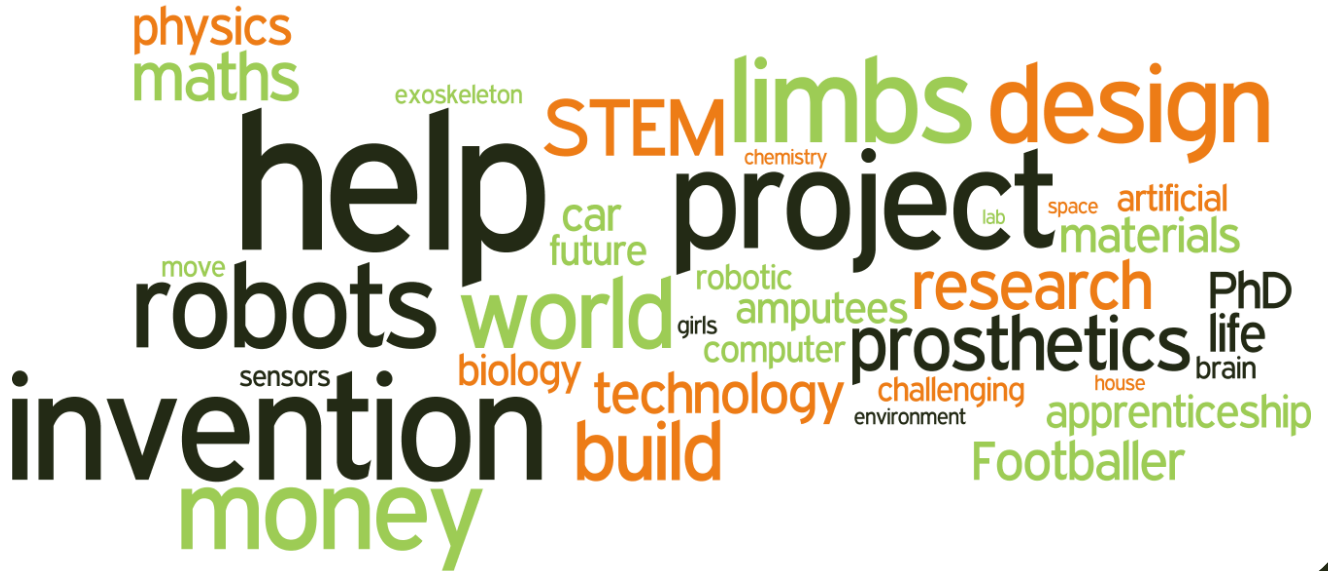
Charlene



Alistair

Chat

Frequent words used in live chats by students and engineers. Size of the word represents its popularity



Examples of good engagement

Students would share their own projects with the engineers and get their advice and opinions. In this case, a student was interested in Shruti’s work in particular:

“@Shruti I am writing a book,, the main character is an amputee, what do you think is the most important thing to consider in terms of how the person would deal with living with a prosthetic” – Student

“Wow! That sounds pretty cool. There are quite a few aspects: I think if they lost their leg because of an accident they would have to adjust to the big change in their life (mentally) and then learning to walk again and the difficulties associated with that” – Shruti, Engineer

“Thank you, the main character has been in a car accident, also, how would a prosthetic impact on doing sports, moree specifically, horseriding?” – Student

“It would take time and they'd probably need a special prosthetic. It would take a while!” – Shruti, Engineer

The engineers discussed their job roles with the students, but also spoke about travelling and personal experiences. One student was interested in how an engineer might get to work internationally:

“do you think your work will ever take you anywhere other than your home country?” – Student

“This was actually a reason I went into my current job! I have worked in Natal in Brazil as part of my PhD, presented my work in New York in USA, Segovia in Spain and Florence in Italy. There are conferences all around the world for robotics that I can present work at and dependant on what project I do I could spend a year in one country and then back in the UK. The options are huge.” – Alastair, Engineer

“It does. Sweden 3 times last year, Denmark last week, also Vienna and Germany.” – Mark, Engineer



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“For me, it’s very funny because I’m already outside of my home country 😊 but I do travel for conferences or project meetings to other countries. But you can always choose to go to another country and work somewhere else if you like a bit of adventure like me. There are loads of opportunities around the world.” – **Faranak, Engineer**



Engineer winner: Shruti Turner

Shruti’s plans for the prize money: “I want to buy some better equipment to improve the podcast I have started with my friend and I would develop a few workshops so we can go in to schools and share the different ways engineering and science are important for some research we do.”

Read Shruti’s [thank you message](#).

Student winner: scrivensy

scrivensy from St Edward’s Church of England Academy was nominated by the engineers for “lots of good questions” and being “very engaged” throughout.

As the student winner, scrivensy 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* activity...

I learnt so much about prosthetics, and how they are made, I got loads of tips about what I should do if I want to be an engineer, and I really enjoyed the live chat. – **Student**

It’s been great. I’ve really enjoyed the variety of questions from students. I’ve been impressed about how much some students have known! – **Shruti, Milligram Zone winner**

I have learnt that there are lots of different jobs for engineering and not just fixing engines and getting all dirty by going underneath cars! Also I like the sound of working like an engineer and have heard you earn quite a lot of money! I think it would be fun and I like the sound of Shruti’s job! :) :) :) :) – **Student**



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[I have learnt] there are many different types of engineering and you can make a big difference by doing something you love. you can help people such as aspiring children and people who used to be in the army which is incredible as it is a job many people think does not help others. – **Student**

it was great to be able to reach out to students from all parts of UK... We 'went' to them... hopefully easier for teachers as they didn't have to come to us – **Engineer**

Students, I really enjoyed your enthusiasm in our live chat sessions! Your questions helped me find new ways to explain my work and taught me something new when I had to search for answers. Your creativity and interest in “why” things work will help you succeed in your education and future careers. – **Brian, Space Zone winner**

I've learned that engineering is in quite a lot of jobs and you need science for engineering – **Student**

You guys have really encouraged me to push forward with my career and to carry on dreaming big! – **Leah, Energy Zone winner**