

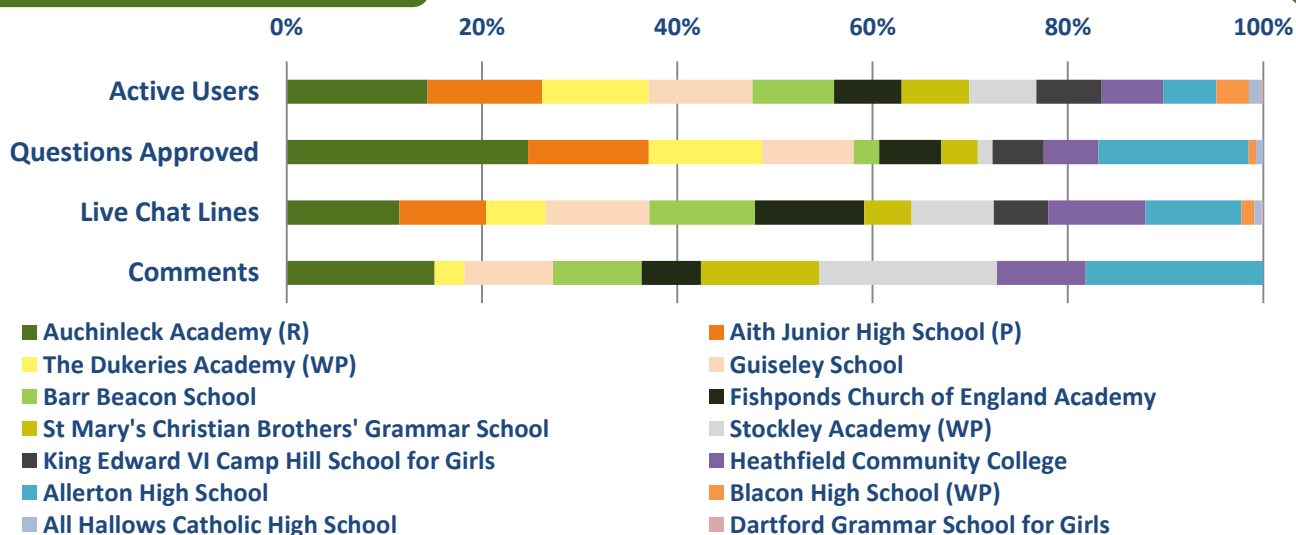
## March 2017

The Artificial Body Zone was a themed zone funded by Wellcome. Zach is a PhD student using computers to look at the movement of bones and muscles in the foot, Todd is a PhD student looking for the best environment to grow a kidney in and Sophie is a lecturer studying new materials and methods to make bone implants. Daniel is a PhD student who has made a living 3D model of the roof of the mouth to study mouth infections, Ana, the winner of the zone, makes artificial legs for amputees and Alejandra is a postdoctoral researcher developing robotic arms for people that have lost their hands.

The zone was lively and the students seemed to easily engage with what the engineers do and how their work is helpful. Notably, the students used it to ask a lot of questions about career choices. Engineers engaged in talking with students about what subjects to take, what apprenticeships to undergo, but also about the fact that it was also very early to specialise, and that there was time to think about what they wanted to do.

The number of answers the engineers gave and of comments in the ASK section was the highest of all the March *I'm an Engineer* zones. The engineers answered an even amount of questions in ASK, and together Ana and Daniel made up over three quarters of all the live chat lines.

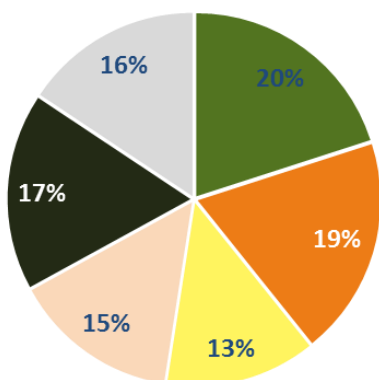
### School data at a glance



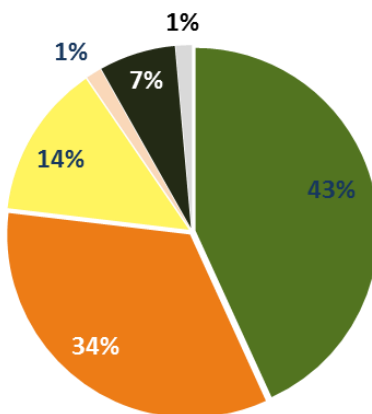
We want to increase the participation of under-represented groups going into STEM careers. Find out what we mean by our Widening Participation (WP) and Rural (R) schools, and how you can support us in working with more of these at [about.imascientist.org.uk/widening-participation](http://about.imascientist.org.uk/widening-participation).

## Engineer activity

### Answers



### Lines of Live Chat



Engineer	Profile views	Position
Ana Gallego	783	Winner
Daniel Morse	627	2nd
Zach Welshman	1,047	3rd
Todd Burton	819	4th
Alejandra Aranceta	463	5th
Sophie Cox	677	6th

## Key figures from the Artificial Body Zone and the averages of the March zones

PAGE VIEWS	ARTIFICIAL BODY ZONE	MAR '17 ZONES AVERAGE
Total zone	25,849	23,927
ASK page	2,018	2,096
CHAT page	2,528	2,229
VOTE page	1,760	1,825

	ARTIFICIAL BODY ZONE	MAR '17 ZONES AVERAGE	IAE AVERAGE
Schools	14	14	10
Students logged in	555	539	396
% of students active in ASK, CHAT or VOTE	86%	85%	85%
Questions asked	779	830	605
Questions approved	267	296	223
Answers given	734	657	449
Comments	88	72	44
Votes	321	342	298
Live chats	21	20	17
Lines of live chat	7,062	7,895	5,342
Average lines per live chat	336	401	307

### Popular topics

Students found the topic fascinating and wanted to know more about it. Besides the technical details of what the engineers do, they wondered about the possibilities of the technologies to help people.

Ana and Alejandra's work with artificial limbs were very popular, and they were asked how expensive it is to make them, how they are maintained and how brain signals can control them.

Todd was asked how long it takes to grow a kidney, what temperature it needs to be kept at and how they can be used to help people, and Zach about how his prosthetic foot is made and how it reacts to different terrain.

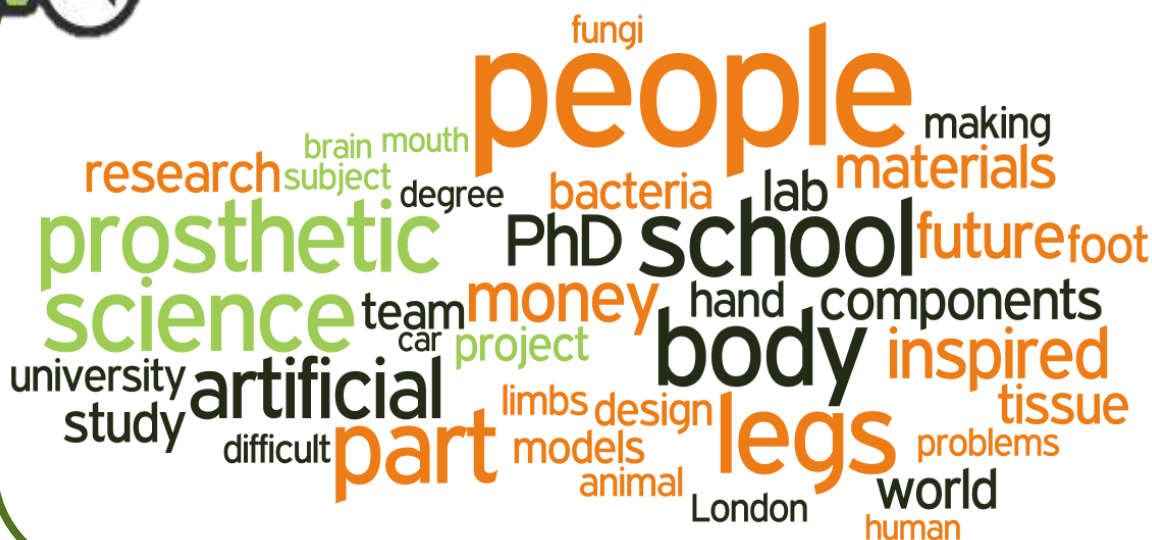
Students were also interested in engineering as a career and the different paths the engineers took. They wanted to know whether the engineers went to sixth form or college, what A Levels they took and what the differences might be compared to being a scientist. Lots of students asked for advice on becoming an engineer.

Students wanted to know details of the engineers' work such as working hours, holidays, aspects they like and dislike, challenges and things they work with. They wanted to know if the engineers ever found their work disgusting, and what the most difficult project they had worked on was. There was also interest in testing on animals and whether the engineers had had to do this for their research.

The engineers and students bonded over personal interests, with conversations on things like favourite TV shows, video games and sports, as well as asking about their experiences in school, what type of school they went to and whether they enjoyed it.

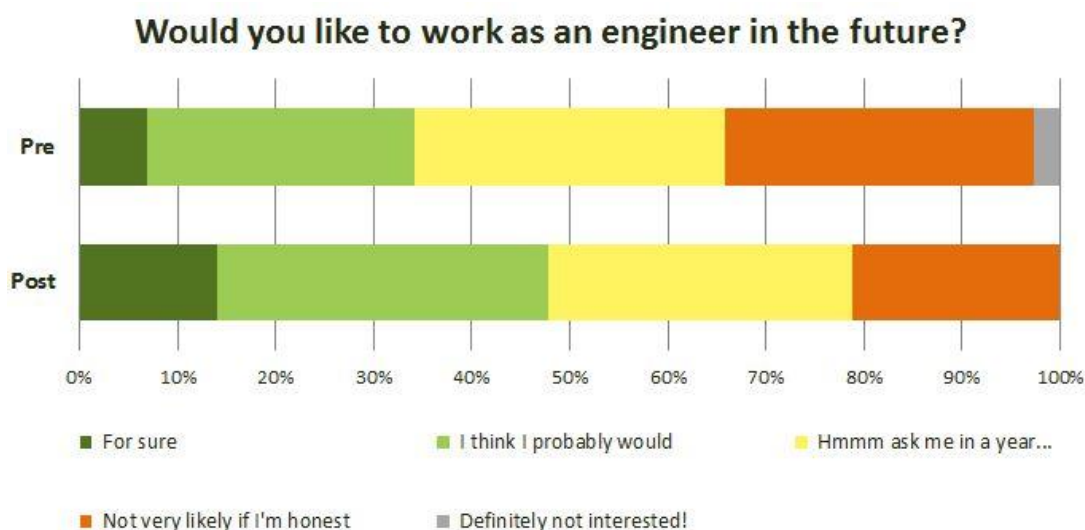


Keywords from live chats in the zone, size of the word represents its popularity



### Students' attitudes to STEM

We ask students directly about how they feel about STEM, before and after taking part in the event. It's clear that participating in I'm an Engineer has an overall positive effect on students' attitudes to STEM:



Figures are averages from I'm an Engineer Zones run between November 2014 and June 2015. We're still collecting feedback for this event, but expect to see a similar positive change.



Keywords of questions approved in the zone, length of bar represents frequency of use

0 2 4 6 8 10 12



## Examples of good engagement

There was a lot of interest in what it's like to be an engineer, and the different sort of things they had individually worked on:

*"What is the most interesting thing you have discovered/invented/studied?"* – **Student**

*"My most interesting thing (for me hehe) was being able to glue something that is almost un-glueable"* – **Ana, engineer**

*"How did you manage that?"* – **Student**

*"I did a lot of research and after that a lot of trial and error. It is important to understand well the chemistry and physics behind what you want to glue. Glueing is fascinating!"* – **Ana, engineer**

The chats often opened up into wider discussions about educations, for example when a student asked about the relationships between teachers and the impression students have of a subject.

*"Do you think that the types of teachers you had influenced your likes and dislikes and would you dislike engineering if you had a bad teacher?"* – **Student**

*"Amazing question teachers are SO important for engaging you as a student. When you get older you'll realise just how important that your teacher is especially when they are organising events like this for you"* – **Zach, engineer**

## Engineer winner: Ana Gallego

Ana's plans for the prize money: "I would like to organise a workshop to teach Materials Engineering / Science via Baking. I love baking and cooking and not long ago I realised that a lot of what I do at work is very similar to baking. How can you turn sugar into something chewy or something really hard? How can I make a structure light and strong applying the same principles that we use to make sponge cake?" Read Ana's [thank you message](#).



## Student winner: olhal27

For great engagement during the event, this student will receive a gift voucher and a certificate.

## Feedback

We're still collecting feedback from teachers, students and engineers but here are a few of the comments made during the event...

*"The genuine interest in my work and my answers and opinions has been amazing"* – **Daniel, engineer**

*"The students were thrilled they were talking to real life engineers and they were responding to them individually. The excitement when their question was answered was fantastic! This sort of opportunity doesn't arrive easily."* – **Teacher**