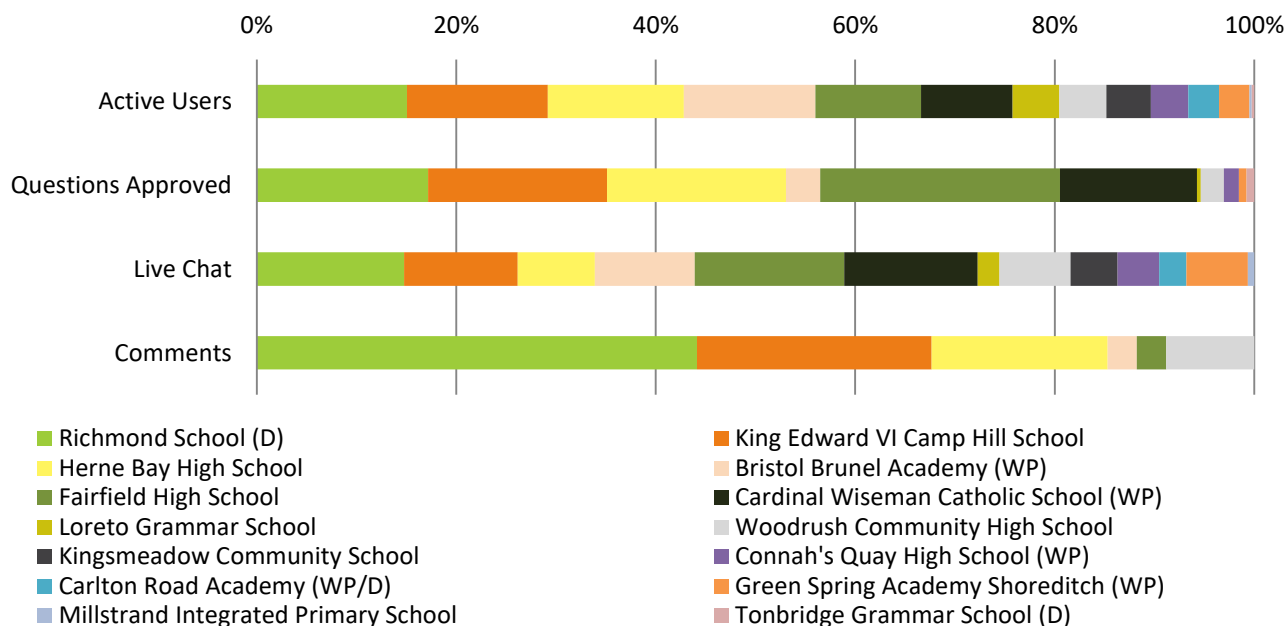


June 2017

The Smart Materials Zone was a themed zone, funded by the Royal Academy of Engineering's Ingenious Grant and involved six engineers working in different areas of materials engineering. Tony is a biomedical engineer inventing new medical devices, Stacey – the winner of this zone – develops new coatings for the Royal Navy's aircraft carrier deck and Niamh is a PhD student working with nano-materials to make a new kind of solar panel. Dimitrios works with transparent materials to make touch sensors and smart windows, Becky works for Speedo International designing textiles to be used in high performance sports and Alessandra is a simulation engineer creating virtual models of new car components to make sure they work before they go into production.

The zone was busy in both ASK and the live chats, and although some students were unsure about what the theme of Smart Materials covered they still showed a strong interest in the engineers as people and there was a lot of interest in engineering as a career. There was also a lot of interest in gender equality within engineering and the experiences of the female engineers in the zone. Within the live chats Stacey, Niamh and Becky were especially good at engaging with the students and helping them understand what engineering is.

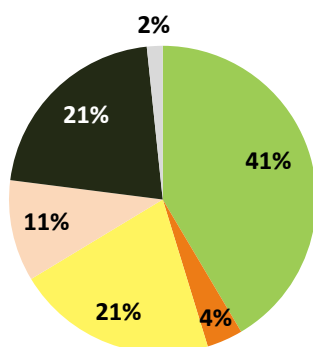
School data at a glance



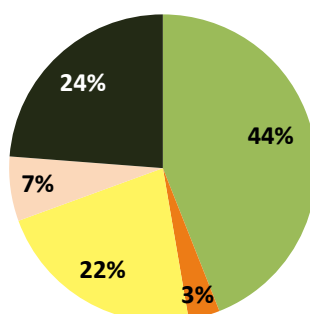
We want to increase the participation of under-represented groups going into STEM careers. Find out what we mean by our Widening Participation (WP) and distant from a major research HEI (D) schools, and how you can support us in working with more of these at about.imascientist.org.uk/widening-participation.

Engineer activity

Answers



Live Chat



Engineer	Profile views	Position
Stacey Marple	1,025	Winner
Dimitrios Ifantanas	930	2nd
Alessandra Treviso	669	3rd
Rebecca Bennett	730	4th
Niamh Ryall	724	5th
Tony Anson	851	6th

Key figures from the Smart Materials Zone and the averages of the June zones

PAGE VIEWS	SMART MATERIALS ZONE	JUNE '17 ZONES AVERAGE
Total zone	24,510	25,595
ASK page	1,652	1,666
CHAT page	3,495	3,192
VOTE page	1,906	1,788

	SMART MATERIALS ZONE	JUNE '17 ZONES AVERAGE	IAE AVERAGE
Schools	14	15	11
Students logged in	482	511	401
% of students active in ASK, CHAT or VOTE	89%	82%	85%
Questions asked	621	675	608
Questions approved	262	292	226
Answers given	422	531	453
Comments	46	61	45
Votes	327	338	299
Live chats	20	19	17
Lines of live chat	6,165	5,979	5,371
Average lines per live chat	308	315	313

Popular topics

As some students found the subject of smart materials difficult to engage with, lots of students in both ASK and the chats were curious about what it was like working as an engineer. They wanted to know what their workplaces and schedules were like, what mistakes they have made and how their work helps with everyday life.

There was a lot of interest in how to become an engineer, with students asking what qualifications were needed, what apprenticeships are and whether science is needed in engineering. Students were also curious about whether following a career path in STEM would lead to a stable, well paid job and were very open with the engineers about their viewpoints and opinions.

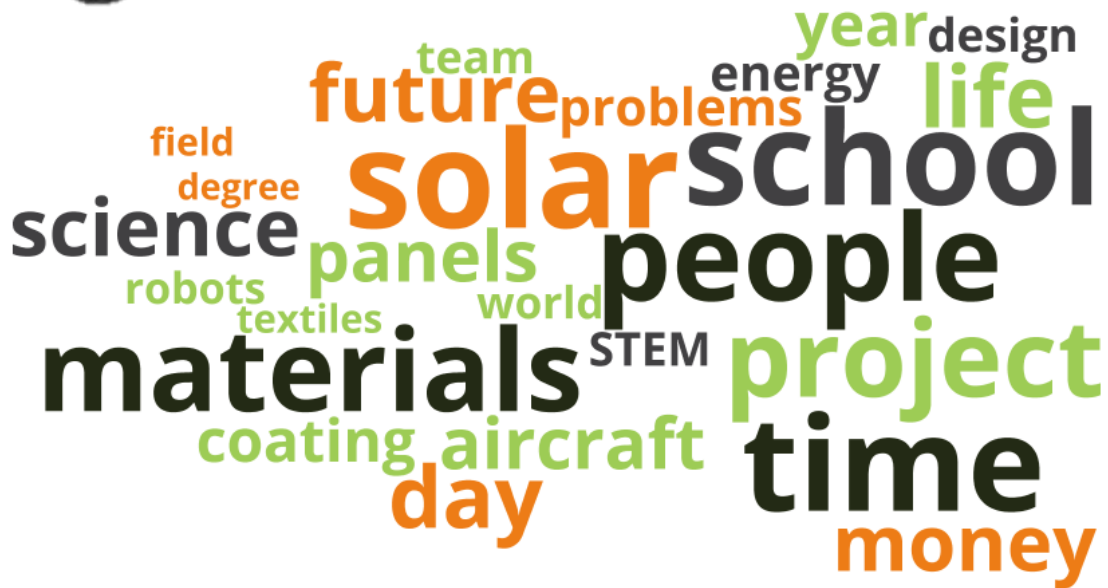
Some of the engineers' work was easier for students to relate to, and were asked more about the specifics of their jobs. For example, Becky was asked about the different textile materials she works with, which sports they are used for and where she gets her inspiration.

Stacey also received a lot of interest in her work, with students wanting to know about the coatings she develops; their texture, effectiveness and whether they have other everyday uses.

Students wanted to get to know the engineers on a personal level, asking the female engineers about their experiences as women in the industry and whether they had come across any discrimination in the workplace. There were also lots of conversations around likes and dislikes, favourite foods, music and travel.



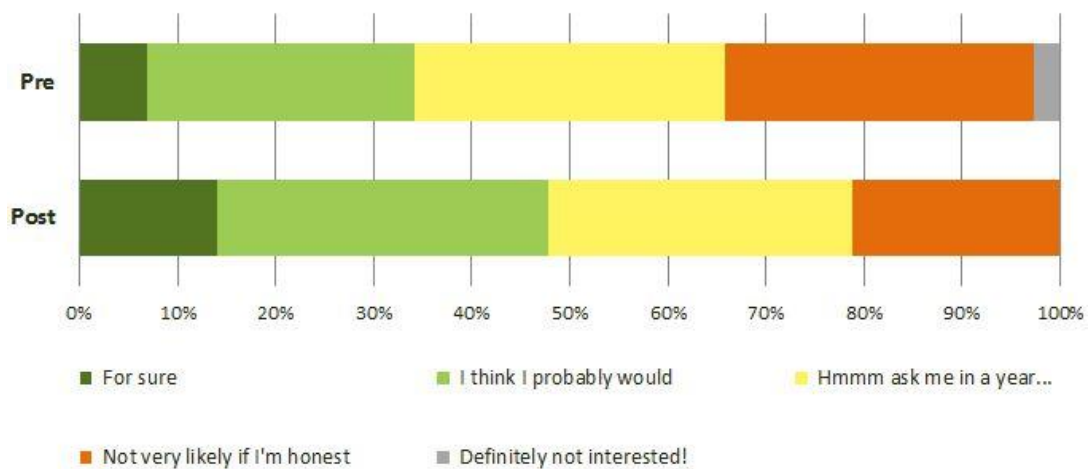
Keywords from live chats in the zone, size of the word represents its popularity



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:

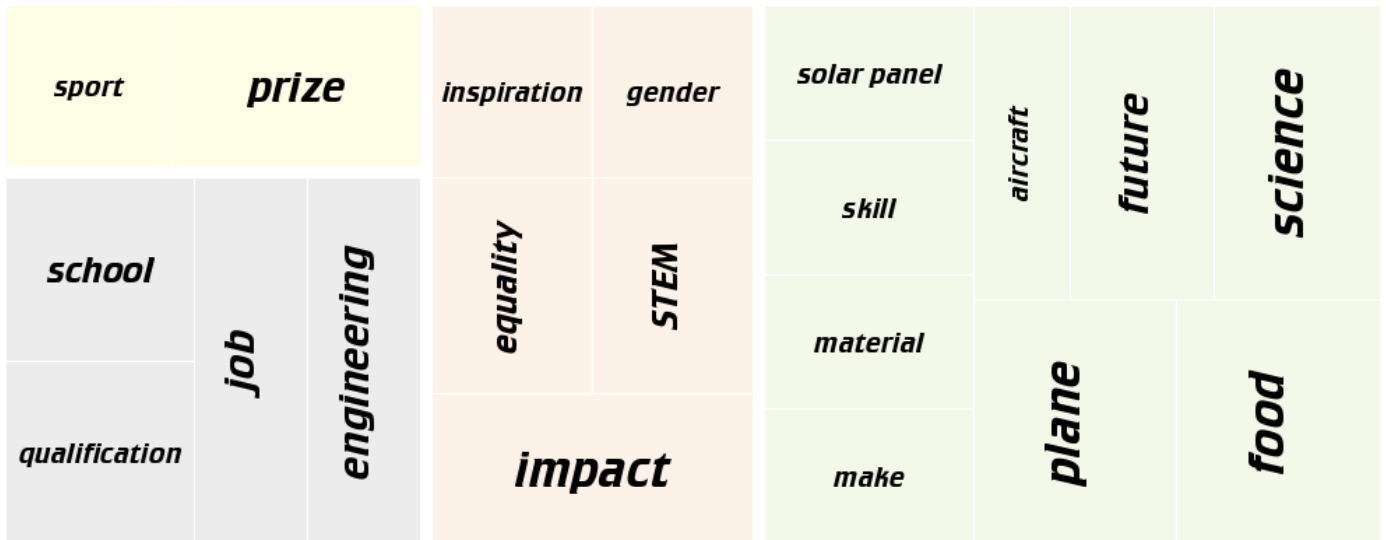
Would you like to work as an engineer in the future?



Figures are averages from I'm an Engineer Zones run between November 2014 and June 2015. We're still collecting feedback for June 2017, but expect to see a similar positive change.

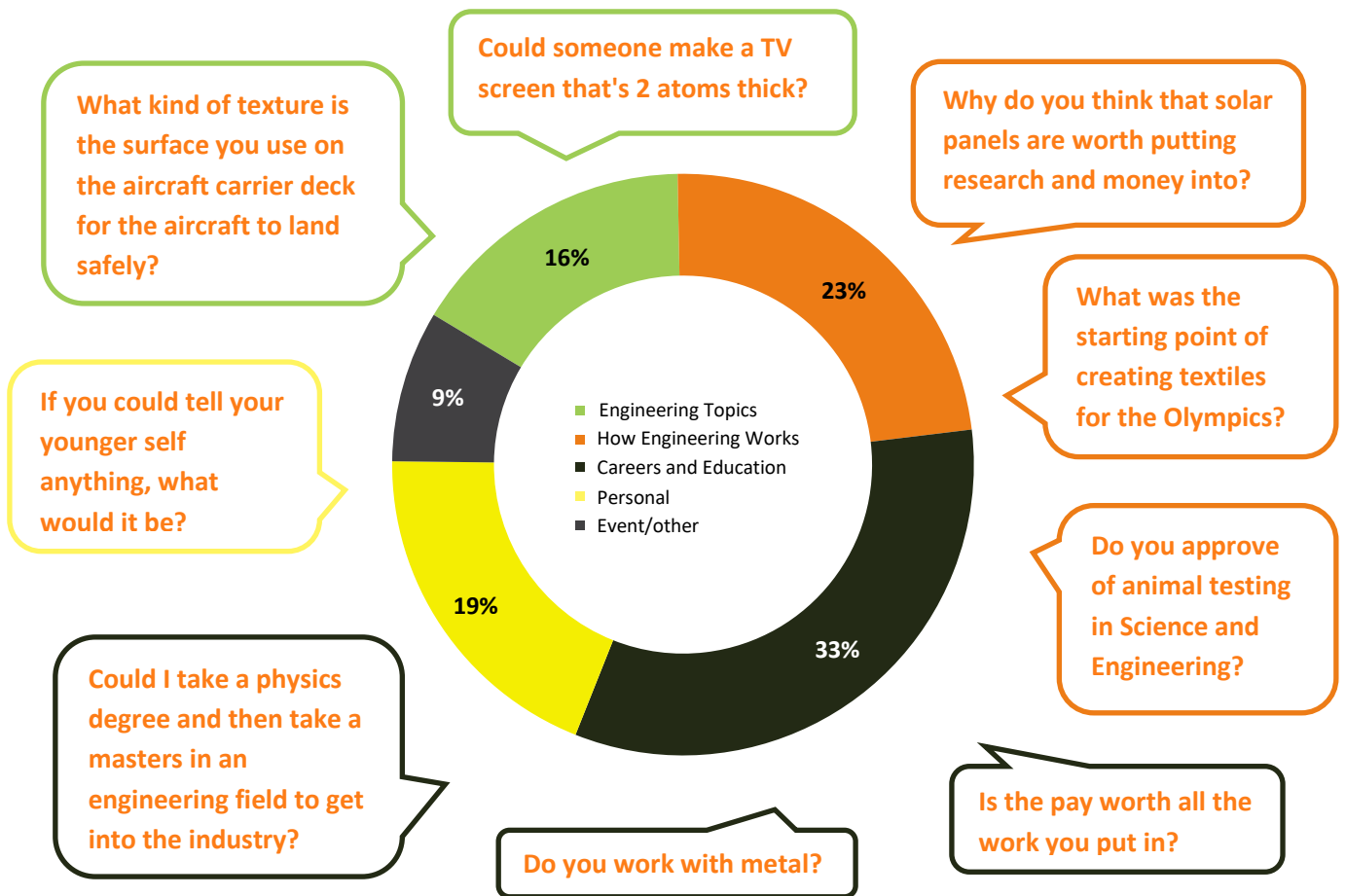


Top Keywords of questions approved in the Zone
Area represents frequency of use, colour represents category



■ Careers and Education
 ■ Motivation
 ■ Engineering topics
 ■ Other

Question themes and example questions in the Zone
(click for links)



Find out about how we've coded the questions at about.imascientist.org.uk/2017/student-question-coding

Examples of good engagement

Students were very honest and open about their views on engineering. Many students were unsure about what an engineer does and why anyone would become one, and whether it is viable as a career. The engineers were great at giving detailed answers stressing the broadness of engineering and how they hoped it would become more visible to students in the future.

“Why an engineer? It has a bad reputation for children. We grow up learning that we should aspire to be scientists, teachers, doctors etc. We want to earn good money and in my mind set that is the opposite to being an engineer. What made you come into this industry?” – Student

“Hi, engineers can earn good money, Elon Musk is a billionaire. I am disappointed to hear that engineering has a bad reputation, engineers are involved with many things that influence our day to day lives (transport, food, energy, connectivity) and are trying to solve the big problems facing the world, like clean energy. I think children aspire to be scientists, teacher and doctors because they are more visible careers. We know more people and see people more often who do those jobs. Engineering needs to make itself more visible. Allowing students to interact with engineers, like through this event, will hopefully help to change children’s views on engineering. I became an engineer because I like creating and fixing things, solving problems and I hope to work on projects which contribute to society.” – Stacey, engineer

“Oh well, I didn’t know about my bad reputation as an engineer. I think engineers are often seen just as cold calculators, merely applying formulas or working behind a screen. To be fair, we do lots of science education produce lots of knowledge but sometimes this is not visible and that’s a real shame. We do a lot of cool things and come up nice inventions too. Making money is an objective but it should be passion to drive you and your career aspiration. If engineering inspires you and involves you then go for it. By the way, you can make good money as an engineer too.” – Alessandra, engineer

Engineer winner: Stacey Marple

Stacey’s plans for the prize money: *“Host an event where students meet engineers and try out engineering, like programming a robot, cool! I would host the event with Tech for Life which aims to introduce people of all ages, skill-sets and backgrounds to the basics of computer programming, digital skills and STEAM, breaking down barriers and providing opportunities for all.”* Read Stacey’s [thank you message](#).



Student winner: JeCla

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 students absolutely loved it and feel like they have gained a real insight into the different possibilities that engineering holds.” – Teacher

“I had my doubts about how effective live chats would be at communicating what I thought/felt about my career, STEM and at putting my personality across - however, my fears were unwarranted! I think it was an absolutely brilliant way to reach out to many students nationwide and I felt that I was able to make a connection to each person that I talked to.” – Engineer