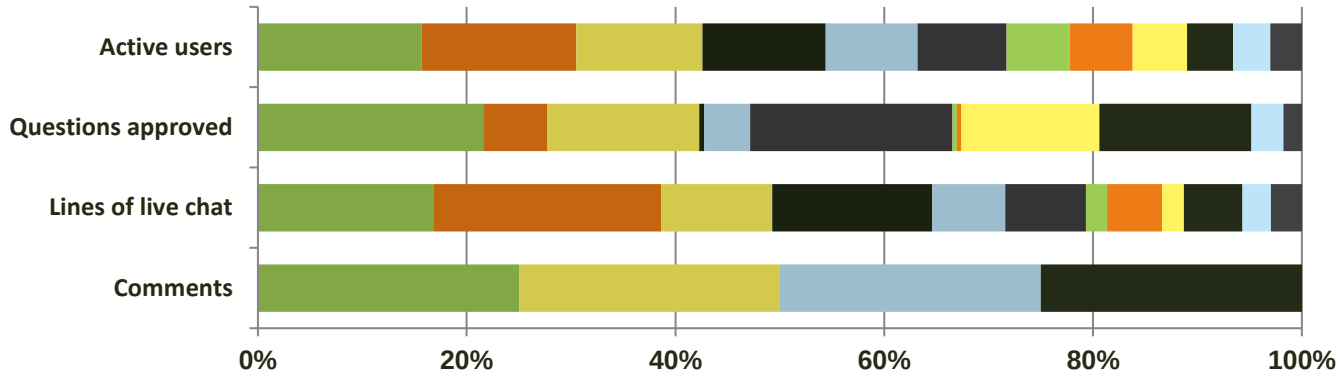
June 2018

The Space Zone was supported by the UK Space Agency with six engineers from upstream and downstream fields of the space industry taking part.

- Xu is an ecologist and Earth observation scientist using satellites to take pictures of Earth and telling people about what those pictures may mean
- Leah-Nani helps to build scientific instruments that go on spacecraft to explore the solar system
- Kathryn is computer modelling a precise, low gravity clock to be installed on the International Space Station
- Ian is CEO at Goonhilly Earth Station, a company that communicates with space ships and satellites
- Hina is working to make the information we collect from satellites in space useful for people on Earth and to make our life on Earth better
- Andrew (the winner of this zone) is an electronics engineer who designs equipment such as cameras and propulsion systems for spacecraft

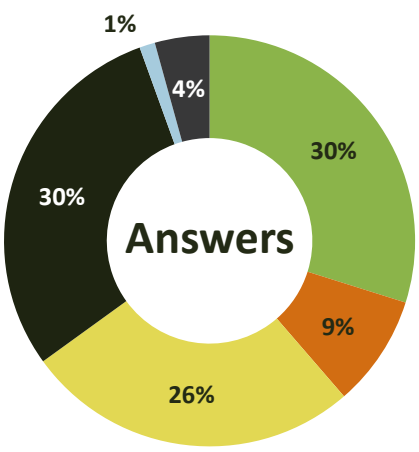
School data at a glance

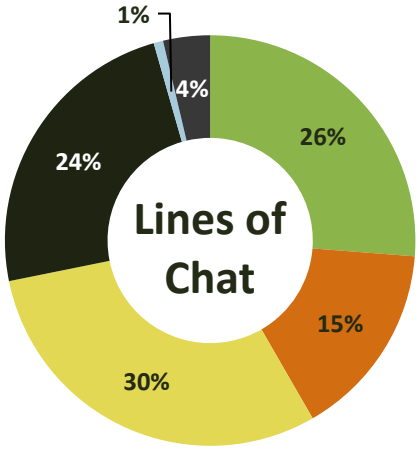


- Sutton High School
- Barr Beacon School
- Frederick Bremer School (WP)
- Reepham High School and College (U)
- Nottingham Academy (WP)
- Saint John Houghton Catholic Voluntary Academy
- Lark Rise Academy (U)
- Redmoor Academy (U)
- Haileybury Almaty
- Sawtry Community College Academy (U)
- King James's School (U)
- St Laurence School

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 WP schools (WP), 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
Andrew Margetts-Kelly	602	Winner
Ian Jones	557	2nd
Leah-Nani Alconcel	614	3rd
Kathryn Burrows	541	4th
Xu Teo	699	5th
Hina Khan	425	6th

Key figures from the Space Zone and the averages of the June zones

PAGE VIEWS	SPACE ZONE	JUNE '18 ZONES AVERAGE
Total zone	16,293	15,237
ASK page	1,247	1,168
CHAT page	1,649	1,456
VOTE page	1,006	1,187

	SPACE ZONE	JUNE '18 ZONES AVERAGE	IAE 2012-18 AVERAGE
Space Zone Schools	12	11	11
Students logged in	401	332	400
% of students active in ASK, CHAT or VOTE	91%	92%	85%
Questions asked	447	458	588
Questions approved	227	206	223
Answers given	489	476	437
Comments	25	33	43
Votes	263	233	296
Live chats	19	17	17
Lines of live chat	7,700	6,950	5,425
Average lines per live chat	405	409	313

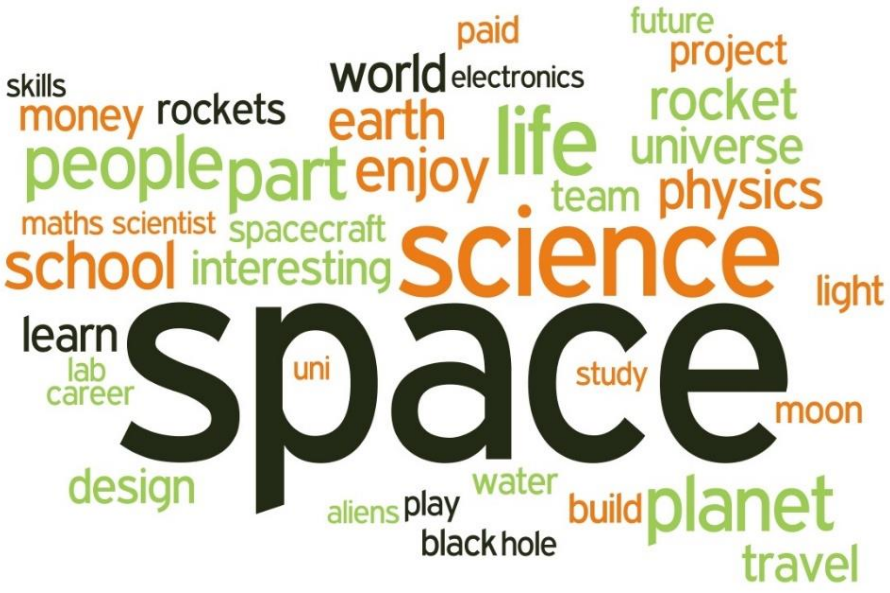
Popular topics

Students were very engaged with the zone theme, wanting to know about all things to do with black holes, space travel, planets and aliens. The students were interested in the individual work areas of the engineers, asking Leah-Nani, Kathryn and Andrew about the different devices they design and make. They were curious about the engineers' work to do with the International Space Station, including the low gravity clock Kathryn is currently working on. Students also asked Xu about how his work as an ecologist relates to space.

There was a lot of interest in engineering as a career, and what the engineers felt that their current work gave them that they couldn't get from other jobs. They wanted to know about the range of subjects that are useful for engineering, such as science, maths and DT. Students also asked about the day to day aspects of the engineers' jobs; if they travel for work, if they work in an office or outdoors and how much annual leave they get.

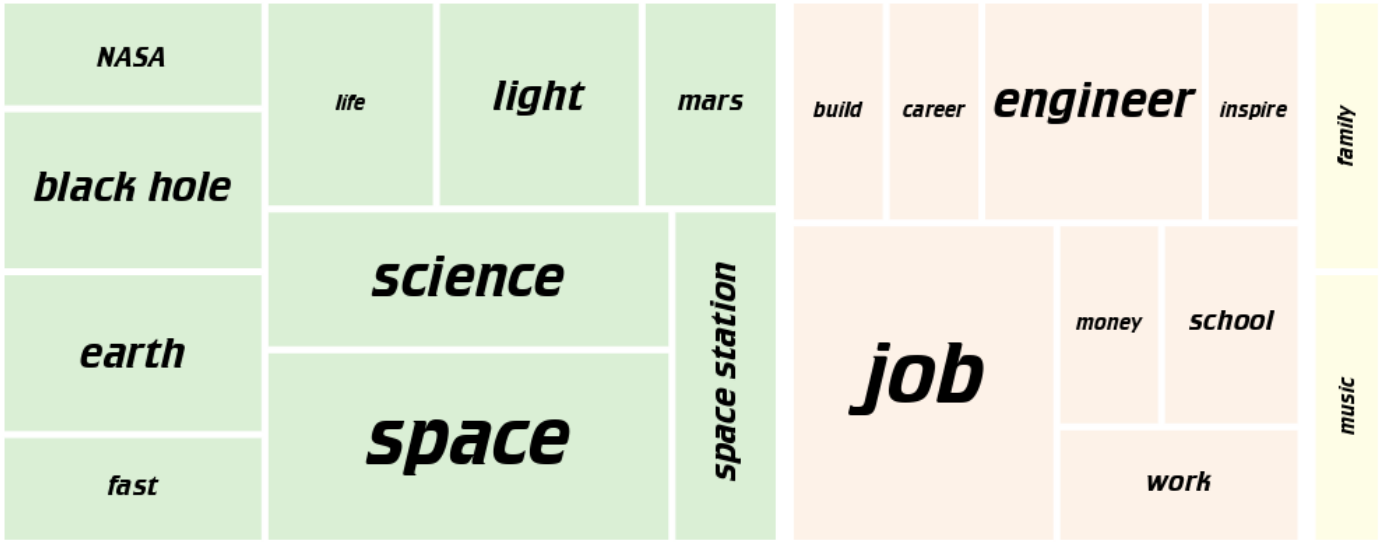
Chat

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



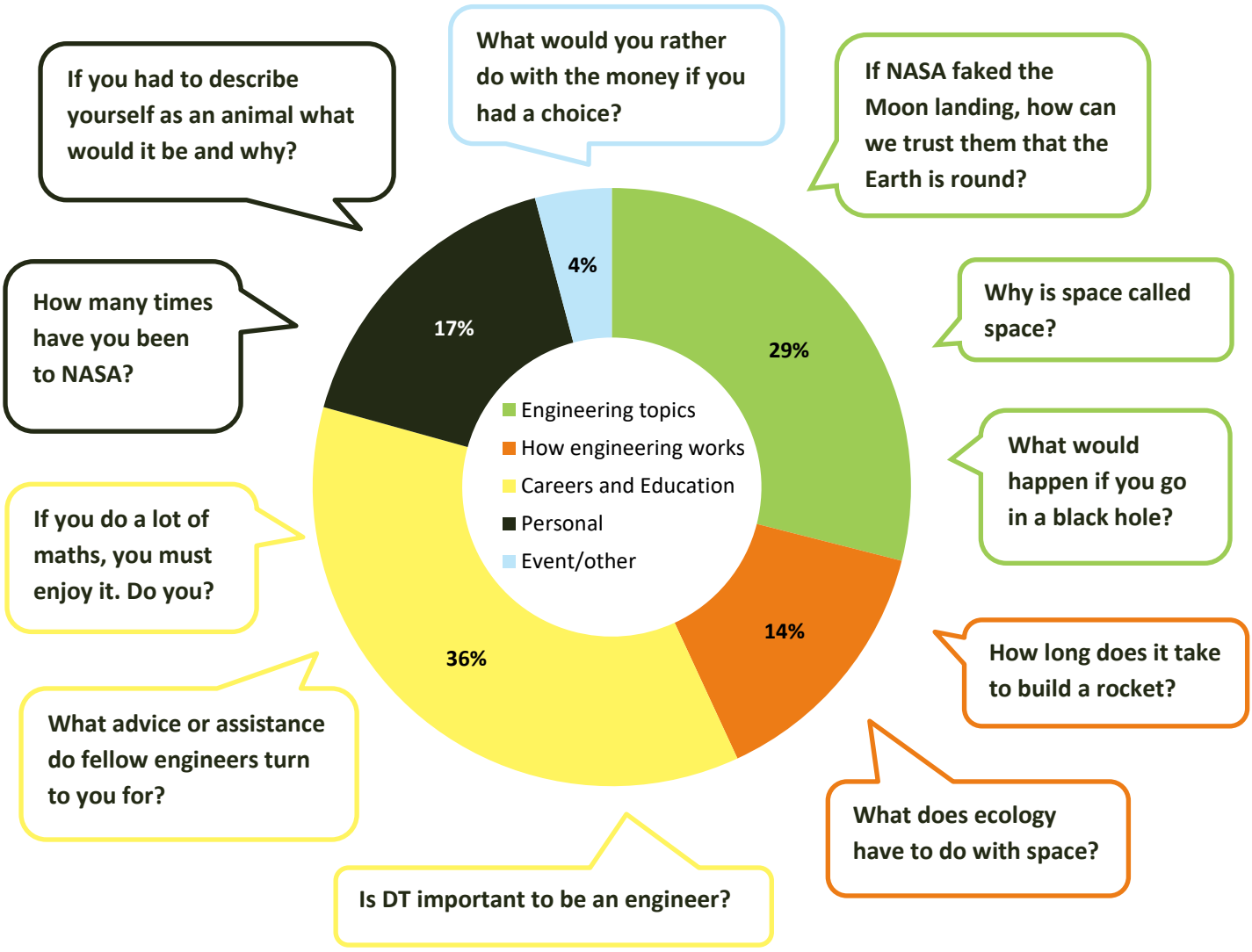
Ask ?

Top Keywords of questions approved in the Zone



Question themes and example questions in the Zone

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



Examples of good engagement

There was a lot of interest in space, with students wanting to know about black holes and antimatter. The engineers were great at explaining complicated topics to the students in Ask:

> *"How can you tell a black hole made out of antimatter from a black hole made out of matter?"* — ***Student***
>
> *"Ooo good question. Now a black hole of only antimatter could in theory exist, however, there is no such thing theorised because there is so little antimatter that it is not sufficient for it to form a black hole. A black hole of both matter and antimatter could not exist as the two would cancel each other out and annihilate."* — ***Kathryn, engineer***
>
> *"We don't currently have a way to see antimatter outside the lab, so if antimatter black holes do exist, we wouldn't know how to observe them. The idea is that every particle has an opposite. Electrons (matter) have positrons (antimatter), for instance. When matter and antimatter meet, they annihilate and produce gamma rays."* — ***Leah-Nani, engineer***

"Amazing question btw :) If you worked out the mass of the black hole and poured the same amount of matter in, it would either be a black hole with twice the mass (if it's a matter black hole), or it will annihilate and have no mass and no black hole anymore (if it's an antimatter black hole). You'd have to wait a really long time though as it takes an infinite amount of time to do this experiment." **— Andrew, engineer**

Lots of students were interested in careers and working as an engineer. Often in the chats multiple engineers would join in with a conversation, giving the students a variety of experiences:

"Do you think that if you knew another language your work would benefit?" **— Student**

"It would totally help to know German. I have a lot of German colleagues" **— Leah-Nani, engineer**

"Does having language skills make your job easier?" **— Student**

"Good question, in the past scientists used to have to learn another language but now the universal language of science is English so we are very lucky and don't need to learn one. My partner is Spanish and he had to learn English for the lessons at university. That said languages are good for your mind, and useful when travelling to conferences." **— Kathryn, engineer**

"English is pretty universal in Engineering - but it's always good to be able to communicate with people in their own language. If you want to be an astronaut (currently) you need to know Russian." **— Ian, engineer**

"Where I work there are about 12 commonly spoken languages, it helps to socialise and also to convey complicated ideas when a word isn't quite right" **— Andrew, engineer**

Engineer winner: Andrew Margetts-Kelly

Andrew's plans for the prize money: "*I run a rocket science workshop in schools where pupils get to learn and experiment with the principles behind rocket science. The money will be put towards better equipment for demonstrations at the workshop.*" Read Andrew's **thank you message.**

Student winner: Harry

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 about the Space Zone…

"It has been such a cool experience taking part in *I'm an Engineer*. I have always thought that engineering would be a very interesting job ... *I'm an Engineer* has inspired me even more to be an engineer as seeing the diversity of different types of jobs associated with engineering has inspired me so much." **— Student**