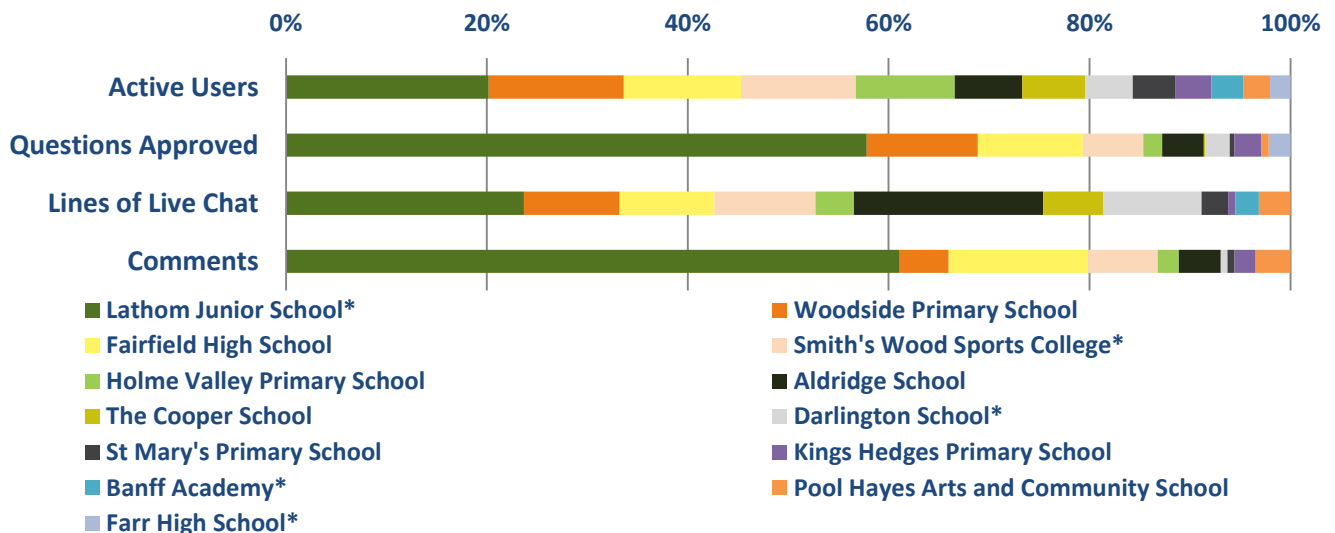


## November 2016

The Space Zone was a themed zone funded by the UK Space Agency with six engineers all working with satellites. Will, the winner of this zone, builds satellites that monitor natural and man-made disasters, Silvia studies the ocean using pictures taken by satellites and Kieran, who started his career as an apprentice, is now the Chief Development Officer for the Satellite Application Catapult. Katie monitors and controls satellites in orbit around earth, Isaac designs and builds satellites and Betty is a rocket engineer who uses satellites to help bring the internet to everyone.

This was the busiest of all the *I'm an Engineer* zones for this event with over 2,300 questions asked by students, 697 of which were approved. Almost 60% of these were asked by one school, Lathom Junior School. All the engineers answered many questions in ASK, and Will, Katie and Silvia were most active within the live chats.

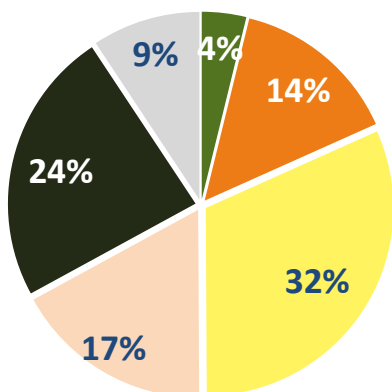
### School data at a glance



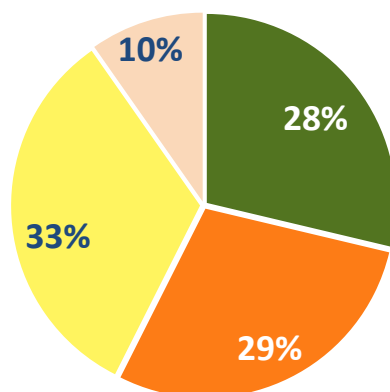
\*Widening participation schools, as defined at <http://about.imascientist.org.uk/2016/widening-participation-2016/>

### Engineer activity

#### Answers



#### Lines of live chat



Engineer	Profile views	Position
Will Avison	1,330	Winner
Katie Bashford	1,212	2nd
Silvia Pardo	1,169	3rd
Isaac Llorens	951	4th
Betty Bonnardel-Azzarelli	740	5th
Kieran Arnold	867	6th

## Key figures from the Space Zone and the averages of the November zones

PAGE VIEWS	SPACE ZONE	NOV '16 ZONES AVERAGE
Total zone	35,425	25,533
ASK page	5,349	2,723
CHAT page	2,449	2,111
VOTE page	2,249	1,912

	SPACE ZONE	NOV '16 ZONES AVERAGE	IAE AVERAGE
Schools	13	13	10
Students logged in	518	481	385
% of students active in ASK, CHAT or VOTE	86%	89%	85%
Questions asked	2,357	1,082	588
Questions approved	697	379	217
Answers given	601	512	434
Comments	155	77	42
Votes	432	379	294
Live chats	21	18	17
Lines of live chat	6,588	7,265	5,151
Average lines per live chat	314	409	307

### Popular topics

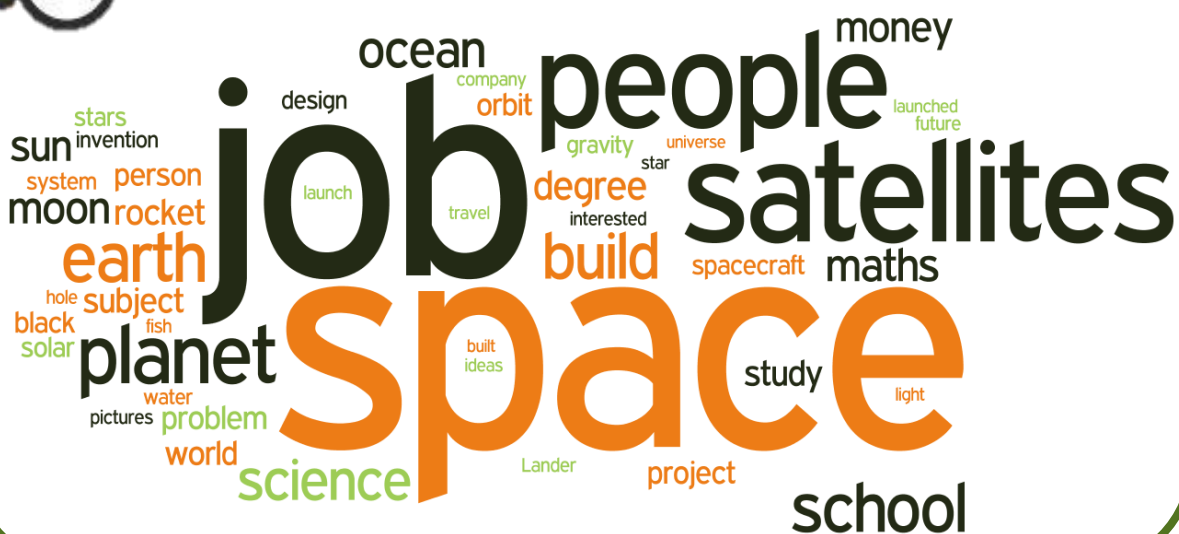
Satellites were a hugely popular topic as all of the engineer's work revolved around satellite design or use. Students were interested in how satellites are made and asked Will and Isaac how they are built and how they work in space. Katie was asked about the ways she can control a satellite, and what happens if something goes wrong.

Silvia received lots of interest in her work studying oceans, with students wanting to know how satellites are able to take such clear pictures, as well as asking about what she is looking for and what she has seen, with particular interest in whether she has seen any animals.

Students seemed really engaged with the topic, as shown by the high amount of questions in ASK. They asked about all aspects of space, for example asking the size, shape and temperature of different planets, what black holes are and if they lead to other universes, and whether the engineers thought there is life on other planets. There was also interest in being an engineer in general, with questions about how hard they found their jobs and whether they ever get bored and wish they could do something else.



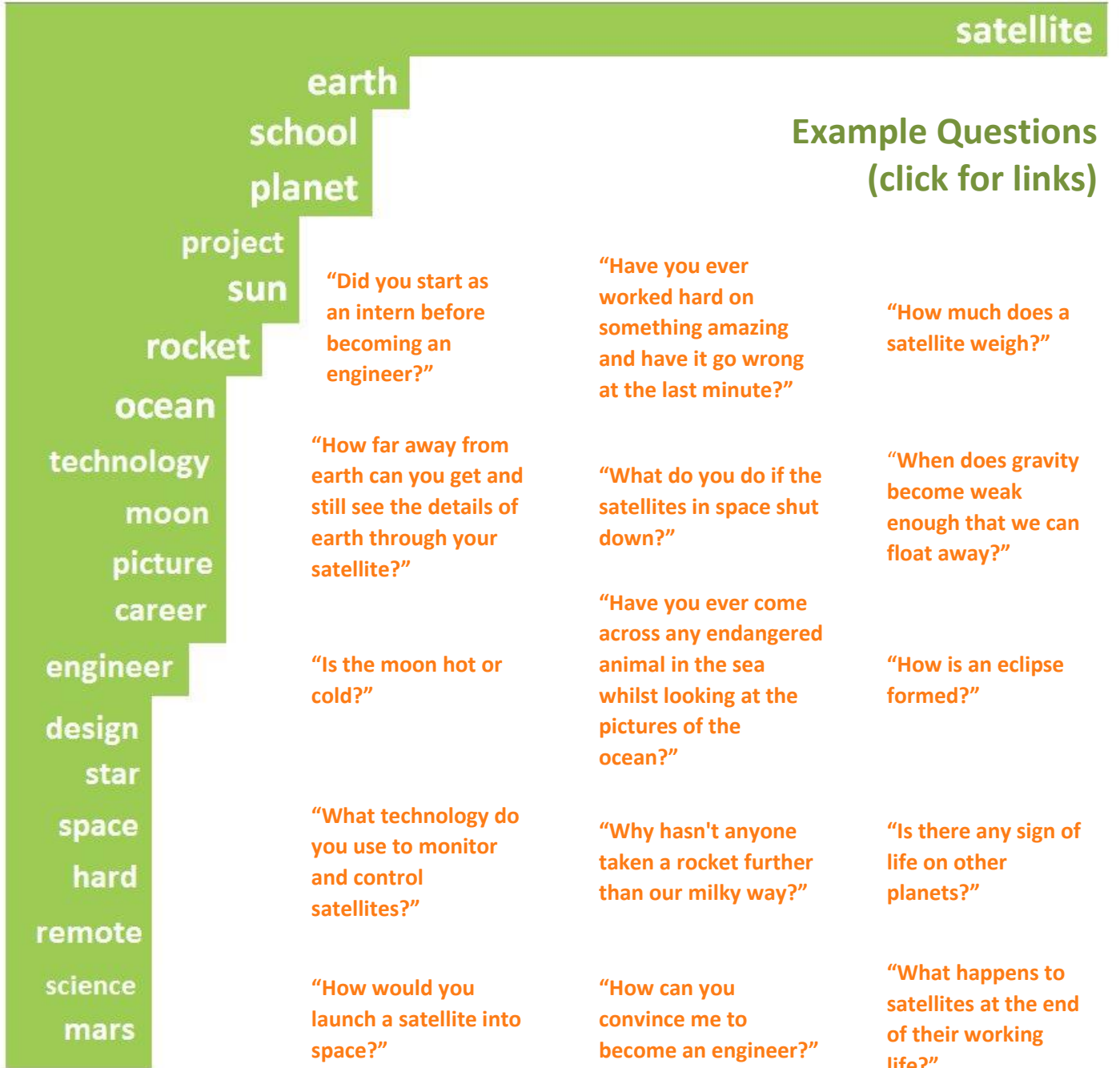
Keywords from live chats in the zone, size of the word represents its popularity





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

0 5 10 15 20 25 30



### Example Questions (click for links)

“What is remote sensing and how would you let children work on it?”

“If a satellite is in space, how does a message beam from earth?”

“What does the ocean look like from space?”

“Did you start as an intern before becoming an engineer?”

“Have you ever worked hard on something amazing and have it go wrong at the last minute?”

“How much does a satellite weigh?”

“How far away from earth can you get and still see the details of earth through your satellite?”

“What do you do if the satellites in space shut down?”

“When does gravity become weak enough that we can float away?”

“Is the moon hot or cold?”

“Have you ever come across any endangered animal in the sea whilst looking at the pictures of the ocean?”

“How is an eclipse formed?”

“What technology do you use to monitor and control satellites?”

“Why hasn't anyone taken a rocket further than our milky way?”

“Is there any sign of life on other planets?”

“How would you launch a satellite into space?”

“How can you convince me to become an engineer?”

“What happens to satellites at the end of their working life?”

“When you were at school did you ever think you would become an engineer?”

## Examples of good engagement

Students were interested in the engineers' individual jobs. Silvia was great at asking the students questions too, making conversations personal and friendly.

*"Silvia why do you like the ocean?" – Student*

*"I like the ocean because it's a big mystery! It covers more than the 70% of the planet but we haven't explored it all yet. Are you interested in the ocean?" – Silvia, engineer*

*"Yes very interested. How many oceans have you seen that are colourful?" – Student*

*"That is brilliant! All of them are colourful in some way or another, but I've found the most colourful are in the Caribbean" – Silvia, engineer*

*"Thank you." – Student*

There were some nice exchanges within the chats about the different things in space, like planets and shooting stars.

*"Have you ever seen a shooting star?" – Student*

*"Yes! Lots. Have you ever seen one?" – Katie, engineer*

*"Noo." – Student*

*"One day you will. There are more shooting stars at some times of the year than others. There will be lots in January. Maybe you'll see one then" – Katie, engineer*

*"Why is there lots of shooting stars in January" – Student*

*"There's more in January and August, because during those times Earth is travelling through a busy part of its orbit, and there are lots of rocks that fall to Earth" – Katie, engineer*

## Engineer winner: Will Avison

Will's plans for the prize money: *"As a hardware engineer, I would like to encourage students to see the link behind hardware and software. I would invest the money in Raspberry Pi's to take to schools and teach classes on how to wire up their first LED, detect their first intruder with a PIR sensor and sound an alarm when they have done so."*

Read Will's [thank you message](#).



## Student winner: 852spag23

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...

*"I'm seriously impressed by this enthusiasm and these questions. It's fab!" – Katie, engineer*

*"The chance for students to actually interact with real-life engineers was fantastic, in them realising the range of STEM careers available to them." – Teacher*