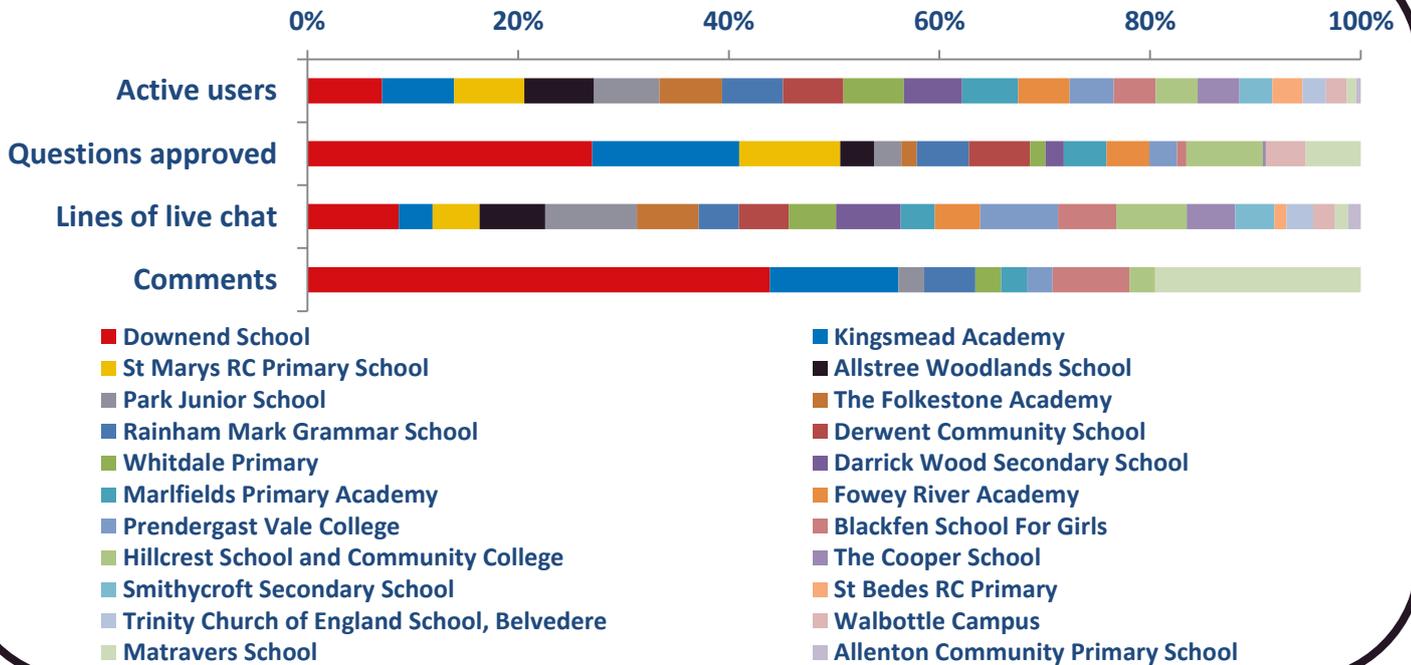


## December 2015

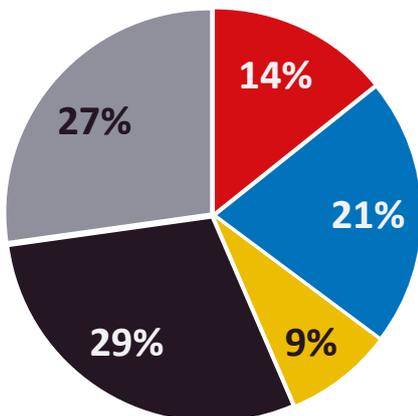
The Launch Zone was the second round of *I'm an Astronaut* funded by the UK Space Agency's Principia grant scheme and astronaut Tim Peake's launch took place halfway through the zone. The students in the Launch Zone interacted with the Astro Support Team: people whose jobs related to human space missions like Principia. The Team consisted of an ESA flight director, an engineer based in Antarctica, and three scientists: one planning an experiment for the International Space Station (ISS), one developing a suit for astronauts to wear in space and another working on a rehabilitation technology for astronauts. The Zone was busy, especially in the 22 live chats that took place. Discussions in the Zone covered a wide range of topics related to space, with a specific focus on human space travel and the work of the Astro Support Team members.

### School data at a glance

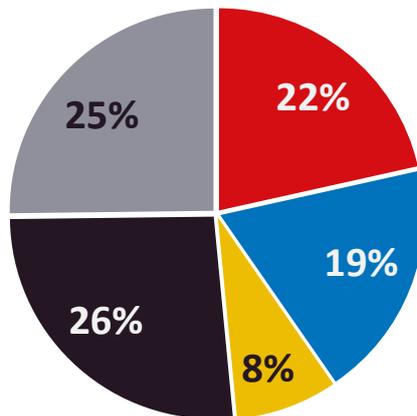


### Team activity

#### Answers



#### Live Chat



Astro Team Member	Profile views	Position
Julia Attias	691	Winner
Alex Finch	622	2nd
Simon Challis	710	3rd
Delma Childers	616	4th
Andrew Winnard	604	5th

## Key figures from the Launch Zone in comparison to other zones

Page views	Launch Zone	Training Zone	IAS Nov Average
Total	32,917	33,553	25,973
ASK	2,002	3,027	1,881
CHAT	3,054	3,886	3,193
VOTE	1,630	1,871	1,761

	LAUNCH ZONE	TRAINING ZONE	IAS 2012-15 AVERAGE
Schools	22	23	9
Students logged in	523	533	353
% of students active in ASK, CHAT or VOTE	87%	78%	85%
Questions asked	1,027	1,145	717
Questions approved	344	446	307
Answers given	661	576	552
Comments	80	138	78
Votes	427	424	281
Lines of live chat	10,030	7,784	14
Live chats	22	21	4,827
Average lines of live chat	456	371	322

### Popular topics

Questions asked by students in this zone covered a very wide range of space-related topics. Many questions for the members of the Astro Support Team asked about specific areas of their work or research. For example, Andrew was often asked about his rehabilitation machine, FRED, in both ASK and live chats and many questions to astrobiologist Delma were about bacteria and microbes surviving in space. After Tim's launch the students asked Simon about specific moments from it, such as when the

guidance computers failed. The students were also interested in how each person got to be where they are, for example asking how Simon became a flight controller, and what motivated Alex to spend a year in Antarctica.

Other popular topics were related to the daily lives of astronauts on board the ISS, for example asking how Christmas was celebrated, how food was prepared and the consequences of living in microgravity for so long, and many students wanted to know about the training needed to become an astronaut. The students were also keen to talk about potential issues and difficulties with space travel, such as what would happen if the space station or the suits were damaged, and the high financial costs involved.

There were also many speculative questions asking about the future of human space travel, the possibility of life on other planets, and doomsday scenarios such as the sun exploding. General space questions were popular with star formation, the big bang and pop culture references, such as Star Wars, appearing throughout the zone.



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

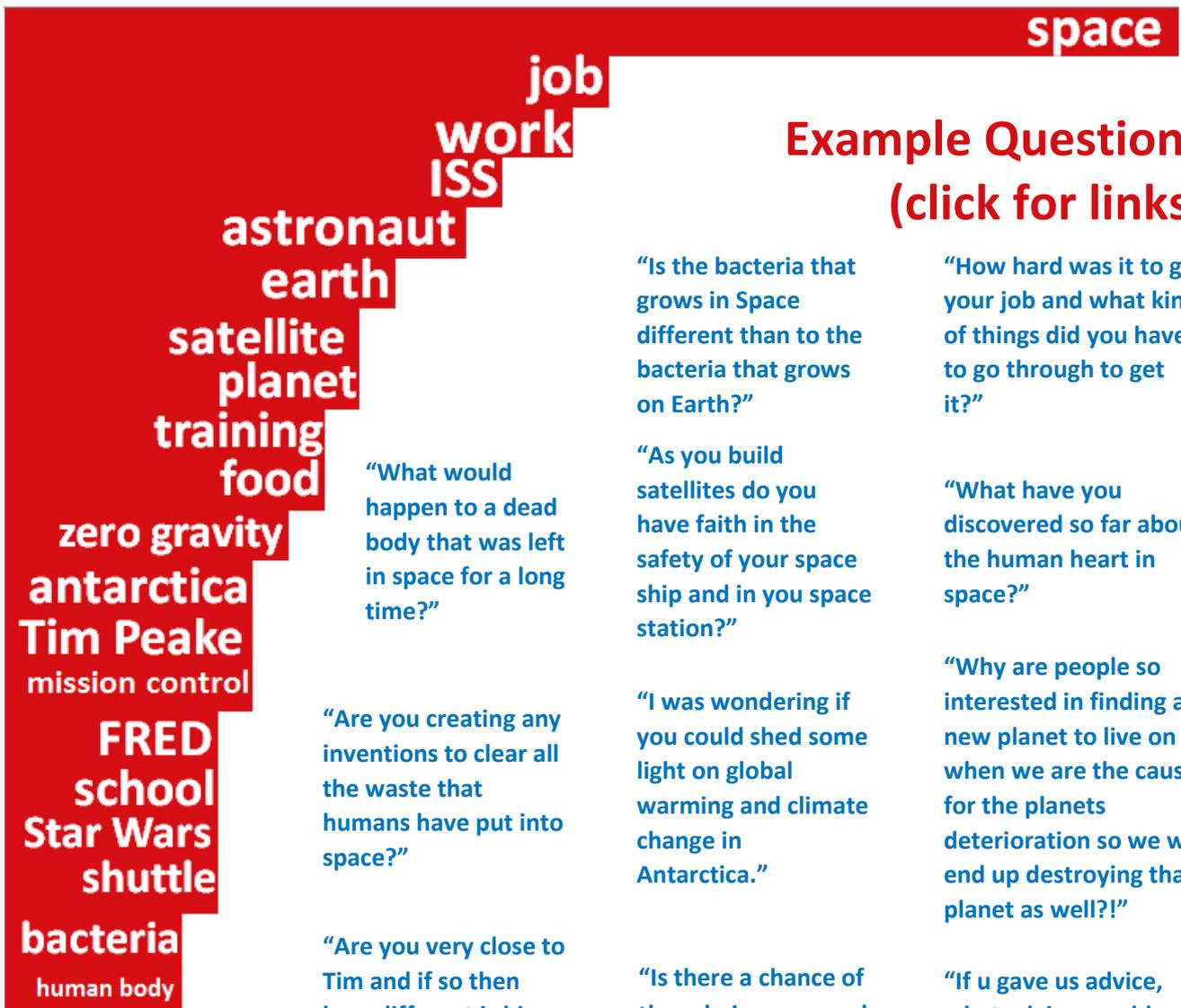


Above is the word 'space' compared to the other words mentioned in live chats.

# Ask ?

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

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32



## Example Questions (click for links)

“Is the bacteria that grows in Space different than to the bacteria that grows on Earth?”

“How hard was it to get your job and what kind of things did you have to go through to get it?”

“As you build satellites do you have faith in the safety of your space ship and in you space station?”

“What have you discovered so far about the human heart in space?”

“I was wondering if you could shed some light on global warming and climate change in Antarctica.”

“Why are people so interested in finding a new planet to live on when we are the cause for the planets deterioration so we will end up destroying that planet as well?!”

“Is there a chance of there being a second ISS?”

“If u gave us advice, what advice would you give us?”

“Do you think space ships like in Star Wars would fly one day?”

“How do you get back to the spaceship if there’s 0% gravity?”

“Would you ever bring a child into space?”

“What differences are there to first aid in space? As you can’t do recovery position on the ground.”

“What would happen to a dead body that was left in space for a long time?”

“Are you creating any inventions to clear all the waste that humans have put into space?”

“Are you very close to Tim and if so then how different is his life style to a normal lifestyle?”

“What does ‘on-console’ mean?”

“When you communicate with the astronauts do you have to do so in their own language? If so how many languages do you speak?”

“How does FRED stop back pains?”

“Are there more male or female scientists working with space?”

“What’s the point in space?”

## Examples of good engagement

The live chats were particularly busy in this zone, and all members of the Astro Support Team matched the enthusiasm of the students, whilst still giving detailed and considered answers. The Team seemed to especially enjoy thought provoking questions about the future of space travel, as in the example below:

**Nadjim, student:** *Is it possible to create a fully sustainable spacecraft? That will not have to stop for fuel/supplies?*

**Alex, engineer:** *Yes, we think so. As long as there is a power supply (solar power maybe) you could make a life support system that is self-sufficient and could support people as long as you want. But growing food is tricky, and usually it's easier to just bring food with you! Fuel is a problem because we absolutely need that and cannot "create" it on a satellite, so refuelling is still needed. But some of our engines are super efficient and don't need much fuel to run!*

**Simon, flight controller:** *That is a really great question! Many people think so and are trying but it is difficult. If you consider a commercial jet plane like a 737 as sustainable that is only possible because of millions of hours of flight experience from a whole range of planes beginning in 1908. In space travel we are a bit behind... probably only 100,000 hours of experience in the last 60 years. But there are whole new set of commercial vehicles like SpaceX, Blue Horizons, Virgin Galactic which could make our experience grow much faster.*

## Astro Support Team winner: Julia Attias

Julia's plans for the prize money: *"To set up a YouTube channel to promote female scientists and inspire other women to work within the STEM subjects. So, like the talks I give in schools, I would like to reach out to the wider public, and hopefully help to inspire them too with a YouTube channel, where I plan to post general science tutorials, Space physiology related topics and experiments, and some personal insights and experiences too."* Read Julia's [thank you message](#).



## Student Winner: Optimus Prime, Matravers School

For great engagement during the event, this student will receive a certificate and will be part of the live chat with Tim Peake when he returns to Earth in the summer.

## School Winner: Fowey River Academy

Fowey River Academy were nominated by the members of the Astro Support Team to be part of the live chat with Tim Peake.

**Feedback** We're still collecting feedback from teachers, students and the Astro Support Team but here are a few of the comments made during the event...

*"You have created a lot of excitement here today. We have had a massive mix of students from those who go to astronomy club regularly after school every week, and those who were only introduced to the idea in our Science Club. It's been a fantastic opportunity for them"* – **Teacher**

*"I have gained a lot of informative knowledge and have enjoyed every minute of this live chat. I don't really want to leave the chat, I could talk to you all day"* – **Student**

*"Some of the most in depth well thought out questions yet, asking about string theory and in Year 8!!!!"* – **Andrew, scientist**