



Sophia



Sarah



Meirin



George



Emily



Andy



March, 2019

The Nuclear Zone was a themed zone supported by the Science & Technology Facilities Council. In the zone were six scientists:

- Sophia Pells, the zone winner, is a nuclear physics PhD student, looking at how we can produce radioactive atoms for treating and imaging cancer, using data from CERN.
- Sarah O’Sullivan, a PhD student trying to make new uranium compounds by heating existing ones.
- Meirin Oan Evans, PhD Student funded by STFC who uses data from a detector to find out what happens when high energy particles are smashed together.
- George Fulton, a scientist at Culham Centre for Fusion Energy, who tests materials under the extreme conditions in a nuclear fusion reactor.
- Emily Lewis, an STFC computer scientist at Harwell who makes models of different nuclear reactor designs to find out how they behave.
- Andy Buckley who researches particle physics and predicts the outcomes of colliding super-high-energy protons together in the Large Hadron Collider.

Key figures from the Nuclear Zone and the averages of the March zones

PAGE VIEWS	NUCLEAR ZONE	MAR '19 ZONES AVERAGE
Total zone	21,439	15,399
ASK page	1,736	1,114
CHAT page	1,761	1,291
VOTE page	1,836	1,327

	NUCLEAR ZONE	MAR '19 ZONES AVERAGE	IAS 2012-19 AVERAGE
Nuclear Zone Schools	11	8	10
Students logged in	473	388	391
% of students active in ASK, CHAT or VOTE	95%	92%	86%
Questions asked	674	443	675
Questions approved	279	216	297
Answers given	782	437	532
Comments	75	29	71
Votes	404	312	308
Live chats	21	19	16
Lines of live chat	8,014	6,732	5,711
Average lines per live chat	382	352	358

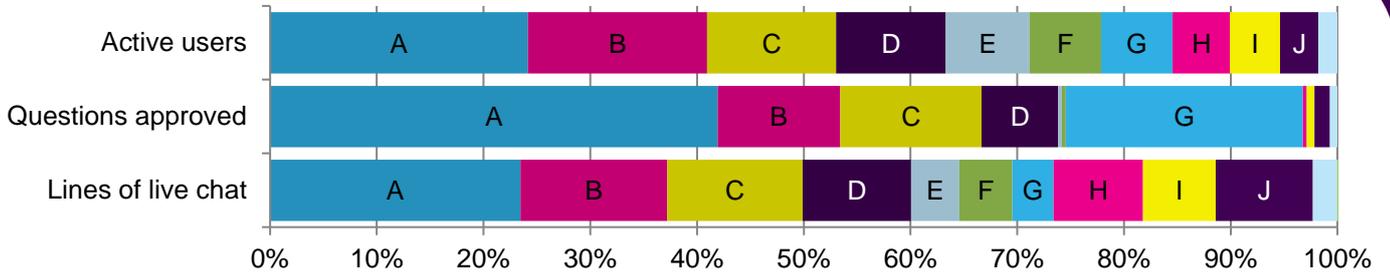
Popular topics

Students were very interested in the zone’s theme. They asked questions about physics, energy and nuclear power. They also wanted to know about the scientists’ individual research areas and the kinds of experiments they undertook.

The students asked about cures for diseases such as cancer, and specifically asked about radiation.

A quarter of the questions sent to ASK related to careers and education, particularly the scientists’ career paths and educational experiences. 26% of questions were categorised as ‘personal’, when students wanted to know about the scientists’ hobbies, favourite foods and their life outside of work.

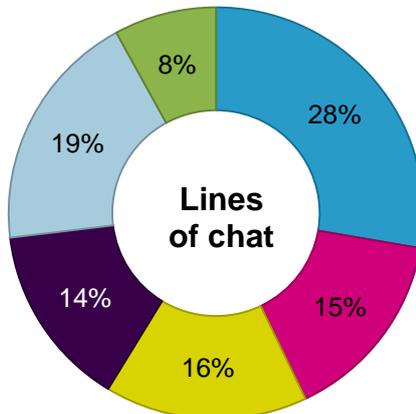
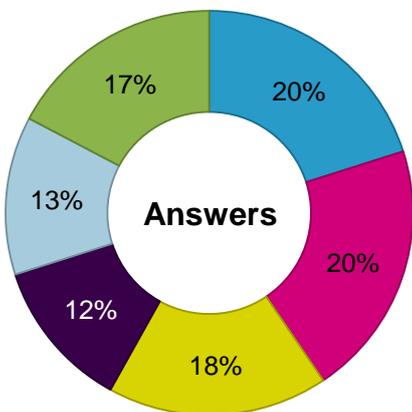
School data at a glance



School	Year/s	Classes
A John Flamsteed Community School, Ripley, U	Y9	3
B Dartford Science & Technology College, Dartford	Y9	6
C Reepham High School and College, Norwich, U	Y10	2
D Lancaster Girls' Grammar School, Lancaster	Y10	2
E Prince Henry's High School, Evesham, U	Y10, Y13	2
F Howard of Effingham School, Leatherhead	Y8	1
G King James's School, Knaresborough, U	Y10	1
H Wyvern Academy, Darlington, WP/U	Y8	2
I Bohunt School, Liphook	Y8	2
J Hampton Court House, East Molesey	Y7	1
K Mulberry Academy Shoreditch, London, WP	Mixed STEM Club	1

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/

Scientist activity

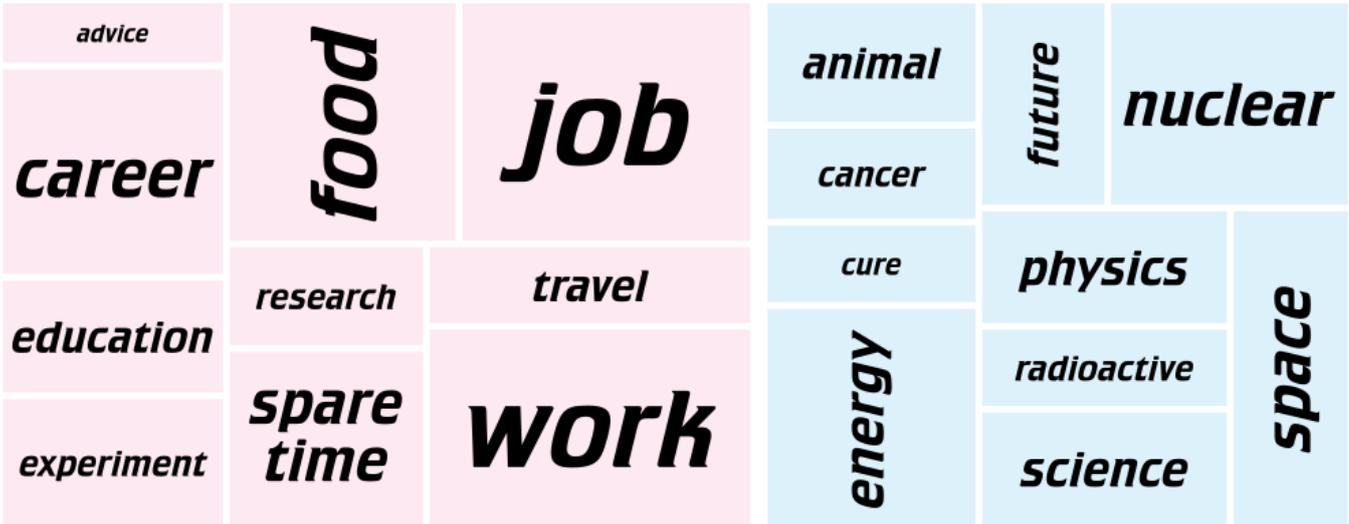


SCIENTIST	PROFILE VIEWS	POSITION
Sophia Pells	1,050	Winner
Meirin Oan Evans	890	2nd
Andy Buckley	735	3rd
George Fulton	683	4th
Emily Lewis	588	5th
Sarah O'Sullivan	669	6th

Ask ?

Top Keywords of questions approved in the Zone

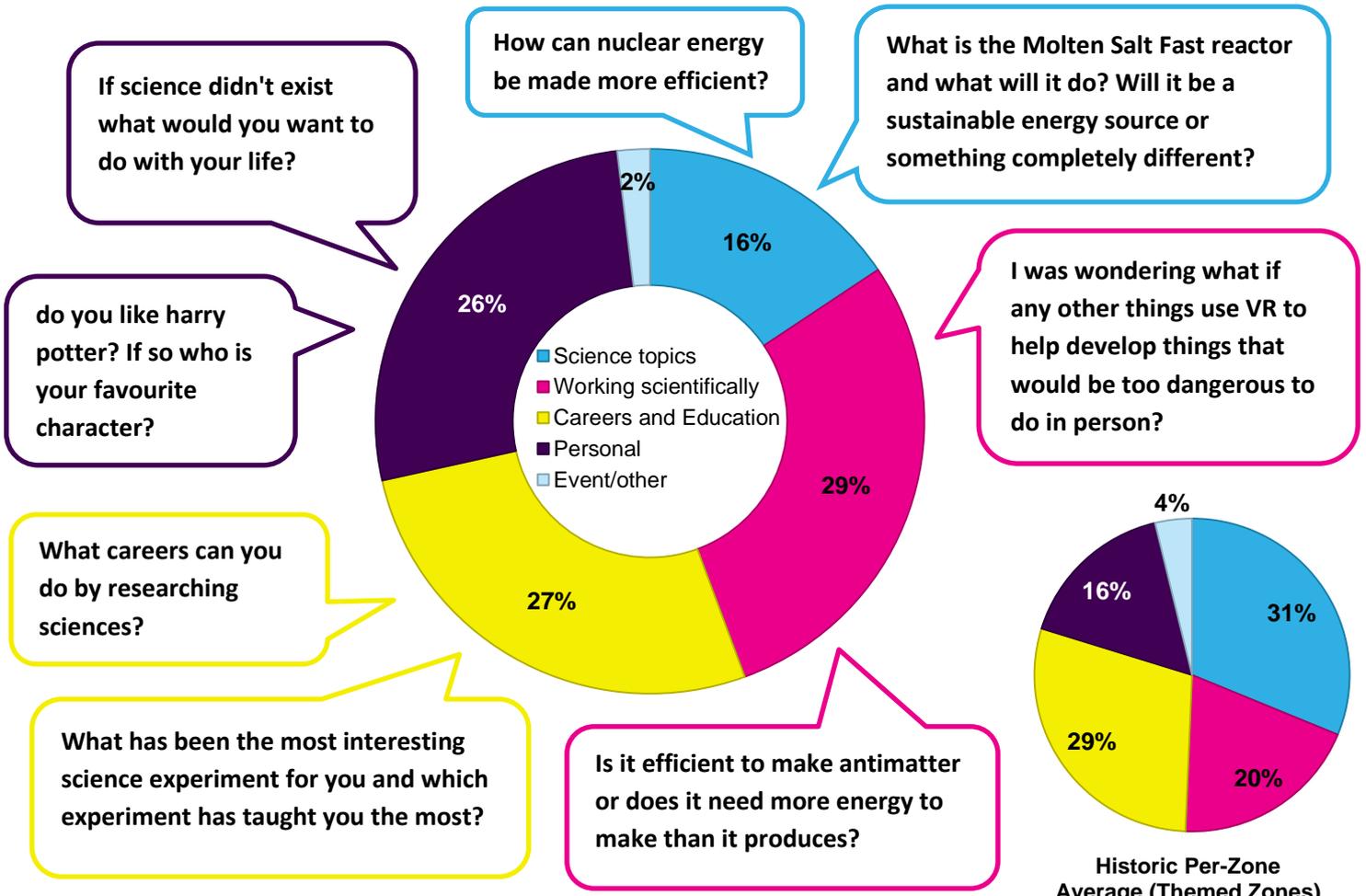
Area represents frequency of use



Being a Scientist Science

Question themes and example questions in the Zone

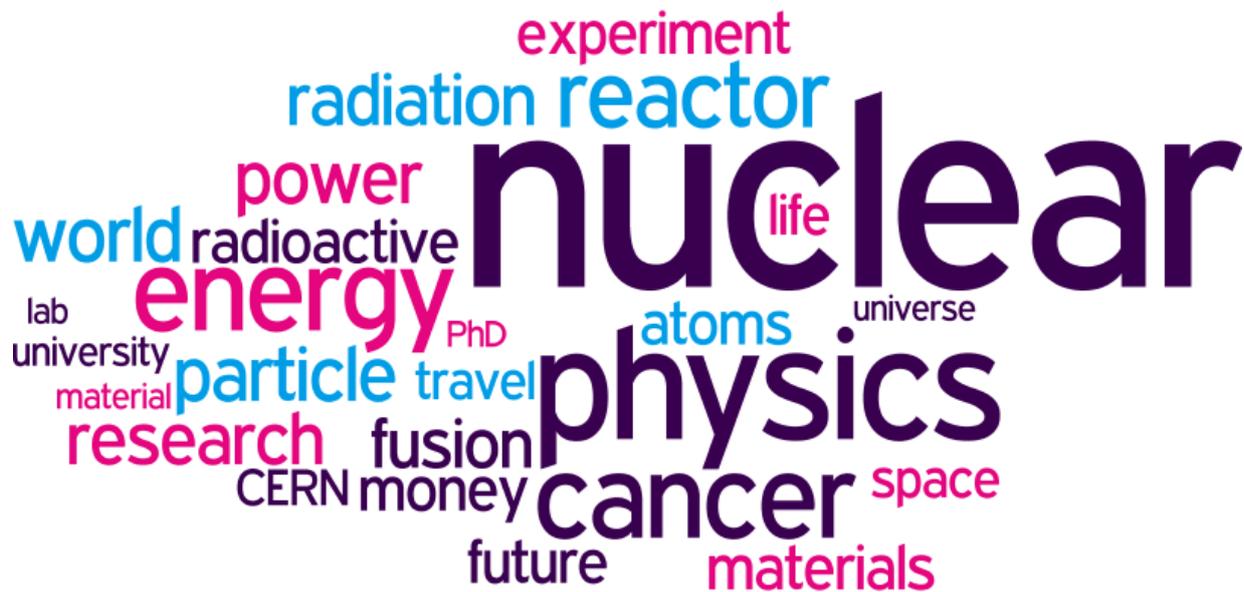
Find out about how we've coded the questions at about.imascientist.org.uk/what-do-students-ask-about/



Historic Per-Zone Average (Themed Zones)

Chat 

Frequent words used in live chats by students and scientists. Size of the word represents its popularity



Examples of good engagement

Students would ask the scientists about things they'd put on their profiles: their education, work history, and even their favourite foods. Here, one student has a conversation with Meirin and shares that they have the same breakfast. This common ground helps scientists appear as 'someone like me' to students, contributing to their science capital*:

"so I was reading about the scientist's profile and you said that your favorite food was cereal with almond milk... now I know this has nothing to do with science but was there really nothing else to choose from?" - Student

"I mean tasty cereal with sweetened almond milk, of course! There's something about cereals with almond milk that gets me excited. Both before I go to bed knowing I'll have it the next morning, and as I wake up. It's probably to do with the fact I'm doing some good by eating a vegan meal. What about you, what's your favourite food?" - Meirin, Scientist

"Well to be honest I eat almond milk with my cereals in the morning too, but..... it's definitely not my favourite food... 😊" - Student

The scientists were able to break down stereotypes of working in STEM, and changed the students' perceptions of what it meant to be a scientist, and what it didn't mean – that you don't have to know everything to work in science:

"What is the hardest questions you have ever been asked and what makes it so difficult to answer?" - Student

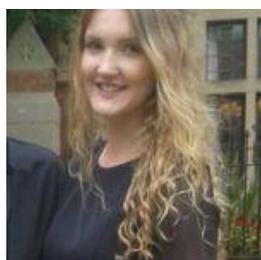
*Science capital is a measure of someone's engagement or relationship with science, how much they value it and whether they feel it is 'for me'. More info at imascientist.org.uk/science-capital

"This one maybe, because I can't remember all the questions I've been asked! I can try my best on science topics in my area, but when we get to the environment or space or biology, I only know a little bit. And sometimes things just don't work the way that the question assumed...that can be awkward" - **Andy, Scientist**

"Oh yeah that much be horrible when people ask you questions that they think you would know but you couldn't really answer" - **Student**

"Afraid so...but I don't have a problem with saying that I don't know! That's important" - **Andy, Scientist**

"Just because you're a scientist it's amazing that you're not afraid to say no or i don't know" - **Student**



Scientist winner: Sophia Pells

Sophia's plans for the prize money: *"I want to get some school students together and use Lego to build a SPECT scanner (the scanners used in hospitals to take pictures of radiation). I would show how the radioactive drugs attach to tumours."*

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

Student winner: 353nucq38

353nucq38 was nominated by scientists for their "excellent questions" and "deep questions about the relation of predictions to measurements".

As the student winner, 353nucq38 will receive a certificate and a gift voucher.

Feedback

We're still collecting feedback from teachers, students and scientists but here are a few of the comments made about the Nuclear Zone...

Thank you very much for answering all of our questions. we have learnt a lot today and we really appreciate it because it has truly inspired us to follow our dreams and not worry about all the bumps in the way – **Student**

[I have learnt] That scientists are just like us! – **Student**

i have learnt that careers in science are very fulfilling and not boring. – **Student**

And here are a few made about the March *I'm a Scientist* activity:

It was fab! The children were engaged, there was a buzz around the room! What a pleasure to witness and inspire them! – **Teacher**

[I have learnt] a lot really about the level I should keep in a conversation to keep interest and how to give students little snippets of info so they do become curious... a crash course in communication really.

And I think I just became passionate about them, who they are what they think, what interests them – **Silvia, scientist**

[I have learnt] scientists are normal people aswell not just nerds – **Student**

I have learnt about all sorts of different scientists that I never knew and their jobs. I think that *I'm a scientist* is really cool as it lets students/ young people find out more about different jobs available in science as well as asking questions and getting answers firsthand. – **Student**

I sign up every term as it is a great addition to help students engage with science. It also ticks an Ofsted box of helping disadvantaged students to relate what happens in the classroom to the real world. – **Teacher**

love the live chats! It gives students the chance to ask anything and they really do! I have grown so much through my participation in this event! Thank You! – **Scientist**