

March 2020

The Electromagnetic Zone was a themed zone funded by STFC. There were six scientists taking part in the zone:

- Megan Maunder is an STFC funded Space Weather Scientist, whose work allows scientists to better forecast how the weather in space will impact the earth.
- Katherine Graves is a PhD student who turns plastic into useful carbon nanotubes, and uses electromagnetic radiation data from STFC facilities to see whether they have formed correctly
- Jesse Dykes is an Optical Scientist at Qinetiq who uses lasers to see through clouds and fog and communicate with satellites
- Dave Constable, the winner of this zone, studies the aurora on Jupiter and Saturn using computer simulations and is funded by STFC.
- Amelia Edwards is a PhD student based at CERN, working on the design and testing of components for future particle accelerators.
- Arjuna James is a PhD student funded by STFC studying the atmospheres of Uranus and Neptune.

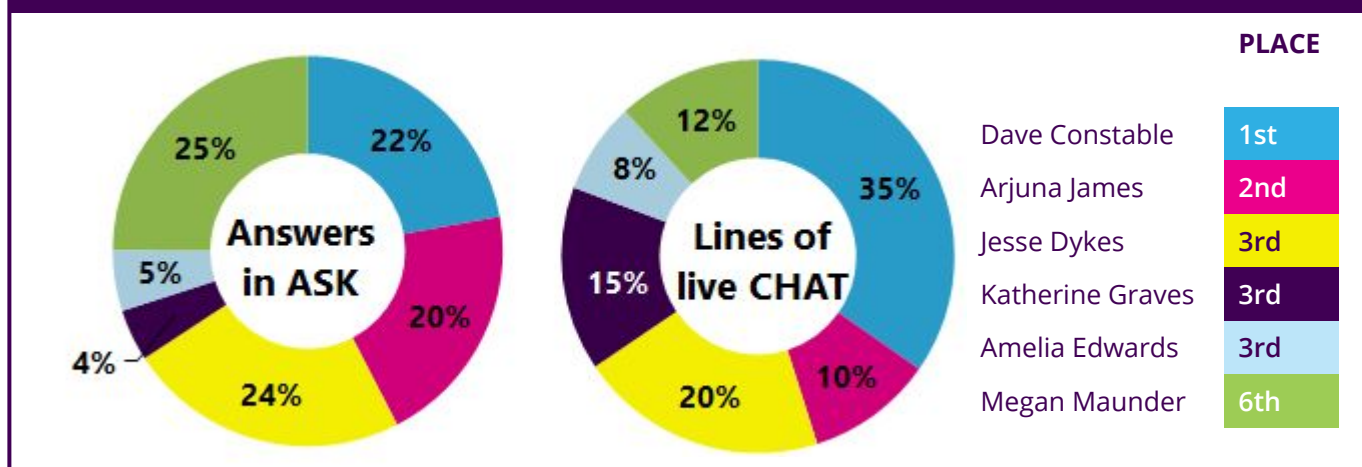
Key figures

The scientists in this zone all engaged well in some way. Whilst the zone winner Dave was the most active in live chats, some such as Megan and Jesse answered a lot of questions in ASK, and others balanced the two.

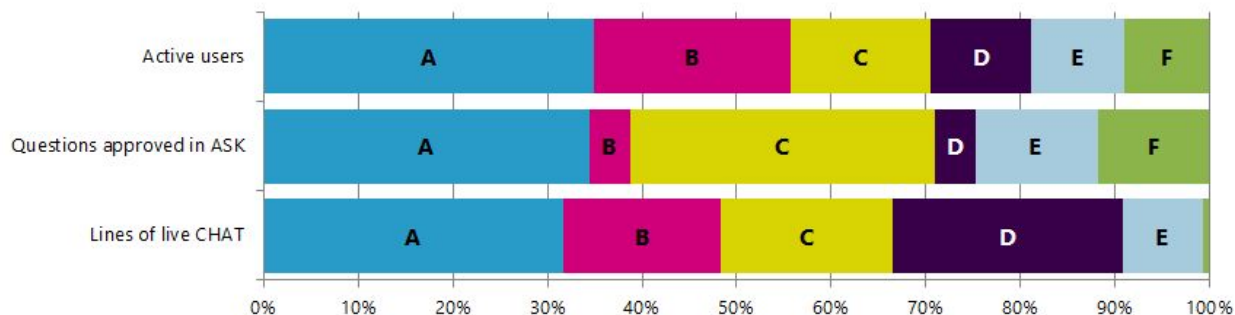
Due to the effects of coronavirus, many schools reported a large number of staff and student absences, which had an impact on their participation in the second week. Students could still access the chat from home so we still opened bookings, but there were a lower number of chats than we would normally see, and they were quieter on average.

	ELECTRO MAGNETIC ZONE	MAR '20 ZONES AVERAGE	2012-19 ZONES AVERAGE
Schools	6	7	10
Students logged in	301	300	385
% of students active in ASK, CHAT, VOTE, or comments	85%	86%	87%
Questions asked	136	251	637
Questions approved	93	154	284
Answers given	257	287	512
Comments	15	27	66
Votes	203	204	301
Live chats	14	14	16
Lines of live chat	3891	4869	5722
Average lines per chat	278	358	357

Scientist activity



School activity



	YEAR GROUP(S)	CLASSES
A Robert May's School, Hook (U)	7,8,9	4
B Prestatyn High School, Denbighshire (U)	9	4
C The Petchey Academy, London (WP)	7,9,10	5
D John F Kennedy Catholic School, Hemel Hempstead (U)	8	1
E Greenacre School, Chatham (U)	9	2
F Brighton Hill Community School, Basingstoke (U)	9	1

We have found that schools that are more than 30 minutes travel time from their closest Higher Education Institution are less likely to receive visits and benefit from engagement activities. We give priority to underserved (U) and widening participation (WP) schools when allocating places. Find out more about our research at <https://about.imascientist.org.uk/2017/school-engagement-in-stem-enrichment-effect-of-school-location/>

Popular topics

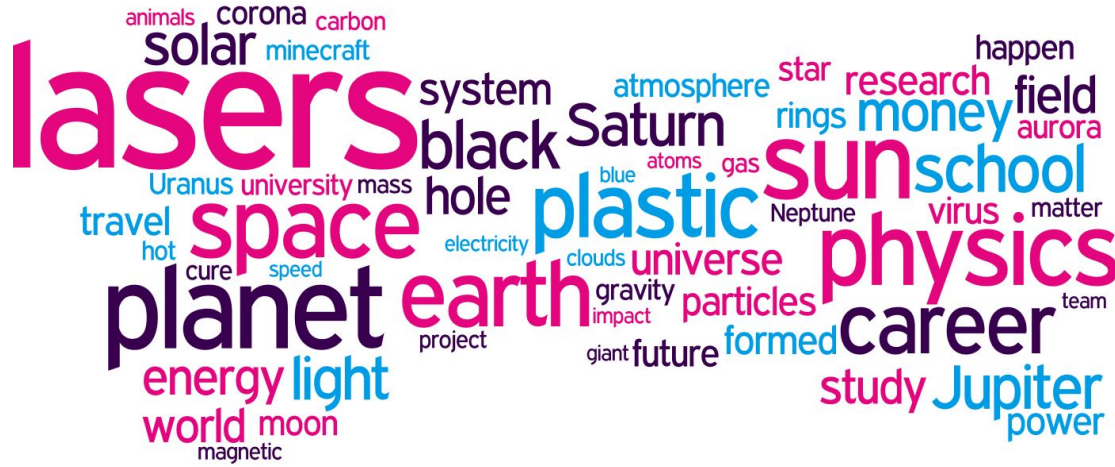
Discussions in the Electromagnetic Zone were on topic, focussing on the scientists work and with particular interest in space and planets.

They asked Jesse about how lasers are made and how they work, and how he uses lasers to communicate with satellites. Megan was asked questions about what first interested her in space weather.

There were also more general questions about science and space, including into areas such as black holes, and whether we could live on different planets.

Students also got to know the scientists on a personal level, asking about their favourite experiments, as well as their favourite sports and food, and how they are trying to save the planet.

Frequent words used in live chats by students and scientists



Question themes and example questions in the Zone



Which country would you look for a school in need of science equipment?

If you could only choose one sport what would it be?

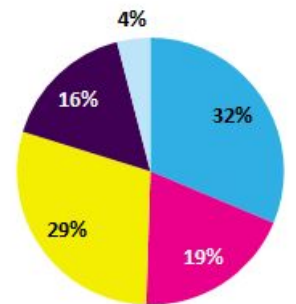
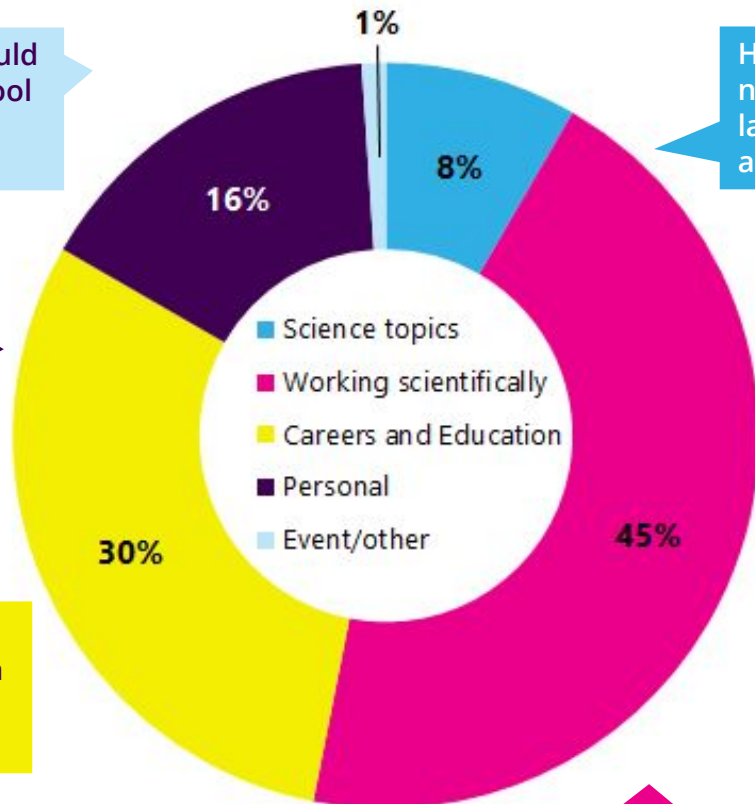
When did you first discover you had a passion for science?

What is your opinion on embryonic stem cell research? Do you think it is ethical?

What type of machines do you use to conduct your experiment?

How long would a normal healthy person last on Neptune without any protection?

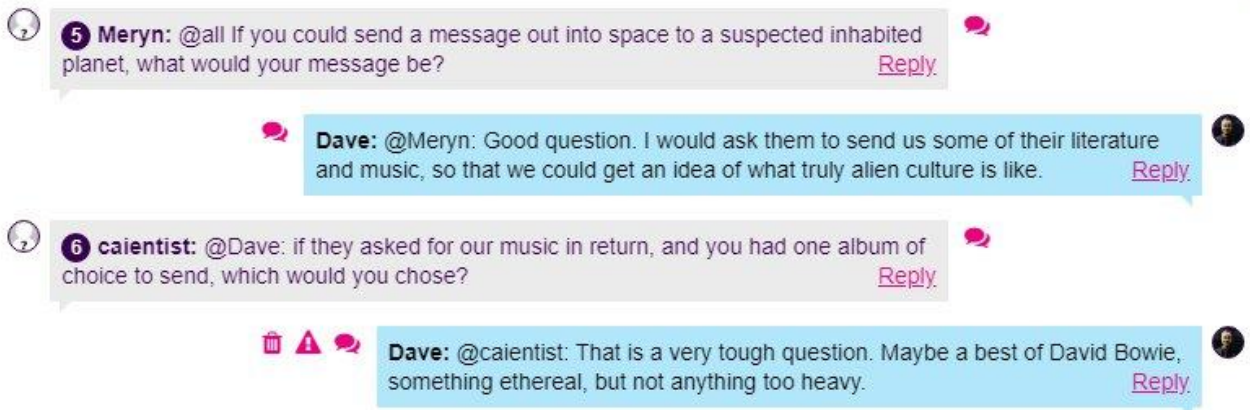
What interests you about weather? In the future, do you think that the accuracy of prediction will ever become certain?



Historic Per-Zone Averages

Examples of good engagement

The students were asking lots of questions about space and the planets. Some of these conversations allowed scientists to show their personal interests, allowing the students to see them as normal people:



There were lots of questions in the zone about the spread of COVID-19. The scientists were all good at giving practical advice about not spreading the disease in simple language:

*"What can we do to help the spread of covid-19 at home in the UK?" - **Student 1***

*"Wash your hands regularly, like after you've been to the bathroom, or before you eat or make food for yourself or other people. Try not to touch your face, as your eyes, nose and mouth are ways a virus could get into your body. Also, if you have to sneeze or cough, use a tissue, and then wash your hands." - **Dave, Scientist***

*"Try not to get it, really. Wash hands, avoid close contact with people who might have it or might be badly affected if they get it. The aim is to slow down the spread as much as possible, as if everyone in the country gets it at the same time it'd be very hard to manage." - **Jesse, Scientist***



Scientist winner: Dave Constable

Dave's plans for the prize money: "I'd like to visit my old high school and talk to students there about space science. I'd also like to spend some money on computer hardware which I can take into schools to allow students to experiment with data from real spacecraft."

Read Dave's [thank you message](#)

Student winner: Oliver

As the student winner, Oliver 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 March's *I'm a Scientist*...

All our students have thoroughly enjoyed the experience, learned a lot and had something positive to cling to this past week
— Teacher

I would highly recommend I'm A Scientists to my colleagues, as I had an incredible experience. The ability for high school students to ask questions (including some real tough ones) directly is a fantastic outreach tool, and I feel privileged to have taken part.
— Scientist

I think this is a pretty unique method of science engagement! You get the chance to get to know and help some of the students, particularly in the evening chats!
— Scientist

Thank you for answering every question no matter what the challenge!
— Student

This has been really useful. Thank you for taking time to answer us! :)
— Student

Thank you for giving up the time and answering our questions you have informed us with a lot of cool and amazing information
— Student